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Dear Reader:

Thank you for your interest in the Draft Pleasanton General Plan. The Plan was prepared by City staff with extensive input from hundreds of members of the community. Your comments on this draft document are encouraged to ensure that the final Plan reflects the participation of all interested persons.

If you or your organization would like to comment on the Draft document, you may do so by submitting your suggestions in writing to me at the above address. City staff will be able to respond to your comments most effectively if you follow these guidelines:

- (1) Please phone me at the number below prior to submitting your comments in writing so that your questions can be answered as soon as possible.
- (2) Submit your written comments in clear and concise language.
- (3) Please indicate if you are commenting as a resident, property owner or representative of an organization and specify your address.
- (4) All written comments must be received by August 1, 1986. The sooner your comments are received, the more responsive staff will be to your concerns.

Public hearings will be conducted in July and August, at which time additional public testimony will be heard by the Planning Commission and City Council. The specific dates of the public hearings will be announced in local newspapers. The final General Plan document is scheduled for adoption in September. An Environmental Impact Report (EIR) has been prepared which evaluates the possible impacts resulting from adoption of the Plan. Comments on the Draft EIR must be submitted no later than August 1, 1986. The EIR and the Draft General Plan documents are available for inspection at City Hall and the Pleasanton Library.

Thank you for your assistance in planning the future of Pleasanton.

Sincerely,

Chandler W. Lee
Principal Planner
(415) 847-8023

THE PLEASANTON PLAN

A Guide to Community Resources, Future Trends
and Long Range Plans

Draft

June 1986

PLEASANTON CITY COUNCIL

Frank C. Brandes, Jr.
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Karin Mohr, Vice Mayor

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Walter C. Wood

PLEASANTON PLANNING COMMISSION

Larry Lindsay, Chair

John Innes, Vice Chair

Brian W. Hoyt

Sharrell Michelotti

Kaye Wellman

Joyce Berger, Alternate

Additional copies of this document, the General Plan Map and all references cited are available at the Department of Planning and Community Development, City Hall, 200 Old Bernal Avenue, P.O. Box 520, Pleasanton, CA 94566 (415-847-8023).



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THE PLEASANTON PLAN

A Guide to Community Resources, Future Trends and Long Range Plans

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THE PLEASANTON PLAN
A Guide to Community Resources, Future Trends
and Long Range Plans

I. INTRODUCTION

WHAT IS THE PLEASANTON PLAN?

State Requirements and Guidelines

The Pleasanton Plan is the official document used by decision makers and citizens to guide and interpret the City's long range plans for development of land and conservation of resources. Each City and County in California is required by State law (1) to adopt a **General Plan** documenting its intentions for future development and conservation. The General Plan must contain a land use map, adopted policies and supporting information adequate to make informed decisions concerning future change in the community.

The Pleasanton Plan is general and flexible enough to allow for future change but specific enough to inform citizens and decision makers of the City's policy regarding the future use of individual properties. The Plan identifies methods for improving public facilities and services to meet community needs and establishes a framework within which zoning, subdivision and other government regulations are implemented. The Plan provides a long term perspective including projections for accommodating growth based on the most current available information. Finally, the General Plan is written in a manner which guides local decision making and is available to all those concerned with the future of the community.

The Pleasanton Plan meets all requirements for General Plans stipulated in State laws including the seven mandatory elements: **land use, circulation, housing, public safety, conservation, open space and noise**. The Plan also includes optional **public facilities** and **air quality** elements.

The Pleasanton Plan is structured to facilitate access to information concerning the community. It documents existing conditions and projects future trends. It explains City policy and offers specific programs to alleviate potential problems. It serves as a reference document to help locate information from a diversity of sources. Finally, it provides a concise guide to making decisions about the future of Pleasanton.

Interpretation of the General Plan

The California Courts have long described the General Plan as "...a constitution for all future developments within the City. No mechanical reading of the plan itself is sufficient..." O'Loane v. O'Rourke (1965) 231 Cal.App.2d at p. 782. Like the Constitution, the Pleasanton Plan must be allowed to grow and change in response to changing circumstances. Like the Constitution, this evolution will occur through formal amendment and through the course of interpretation. The City Council shall be the supreme court for interpretation of the Pleasanton Plan.

As a statement of community values, the Pleasanton Plan contains many generalized goals and policies. These form an internally consistent set of goals and policies. However, these general goals and policies will have to be balanced against each other by City policymakers with respect to a specific site and/or proposed project. Whenever the Pleasanton Plan language will reasonably permit a choice between adopted goals and policies, the policymaker shall be free to select that construction which makes the best sense in light of existing and future community circumstances.

History of Planning and Development in Pleasanton

Pleasanton has been transformed from a homesteading settlement along the transcontinental railroad (1870's) to an agricultural center for grain, hay and hops (1870-1950), to a bedroom community exporting its residents to jobs outside the Tri-Valley area (1950-1980), to its current status as a regional job center.

Originally occupied by Native American Indians, Pleasanton was first settled by Augustine Bernal in 1850. The adobe house he built along Foothill Road is still standing today. Bernal also trained and raced horses in the area, a tradition continued today at the Pleasanton Race Track within the Alameda County Fairgrounds. Pleasanton was gradually transformed from merely a stagecoach stop in the 1850's to a homesteading settlement along the transcontinental railroad in the 1870's to a thriving agricultural center for the production of grain, hay and hops, well into the twentieth century.

The City of Pleasanton was **incorporated in 1894** and became a thriving agricultural and commercial community by 1900 complete with the Bank of Pleasanton, the Pleasanton Hop Company, the Ruby Hill Vineyard and three hotels. In 1917, Pleasanton was chosen as the setting for the film "Rebecca of Sunnybrook Farm," starring Mary Pickford, and later became the site of Phoebe Apperson Hearst's luxurious home, "Hacienda del Pozo de Verona" at the present site of Castlewood Country Club.

During the 1930's Henry Kaiser and others began the harvesting of sand and gravel deposits, an industry vital to the region's

economy to this day. Pleasanton's residential neighborhoods and geographic setting have continued to attract residents and businesses over the past century. During the 1980's Pleasanton's convenient location and unique amenities have attracted a regional shopping mall, several large business parks and a mix of new residential developments. Throughout its history, Pleasanton has successfully combined the virtues of its past with the opportunities to guarantee a prosperous future.

How to Use this Document

The Pleasanton Plan is written for all members of the community including residents, business persons, City officials and those interested in the future of the City. The document is written in lay language with technical terms defined throughout the text and detailed technical data referenced in supporting documents.

The Plan is divided into nine major chapters including this introduction and eight General Plan Elements: Land Use, Circulation, Housing, Public Safety, Public Facilities, Conservation and Open Space, Noise, and Air Quality. Table I-1 shows the relationship between these elements and those required under State law. Each element contains two sections - the first discussing existing and future conditions and the second containing City goals, policies and implementation programs. All statistics referring to existing conditions are current as of **January 1, 1986**, unless otherwise noted.

The Plan also contains footnotes which cite source material referred to in the text and an index of key words which facilitates location of specific subjects. Major policy issues and key words are shown in **bold face type**. Each Goal, Policy and Program is followed by a reference, in parentheses, which cites the origin of the policy and its location in the former General Plan or other document. All Tables and Figures are located at the end of each Element. A colored General Plan Map accompanies this document and graphically depicts the land use policies described in the text. The planned circulation system is shown on a separate Figure in the Circulation Element. A list of General Plan issues inapplicable to Pleasanton is included in Chapter XI.

The text of this document is stored on a word processor at City Hall to facilitate **General Plan Amendments**. There is no limit to the number of amendments which can be made to either the General Plan text or Map, although State law limits amendments to four publicly held meetings per year.

Citizen Participation and the General Plan Process

The former General Plan was adopted in 1976 with updated elements and amendments added through 1985 (2). In 1982, the Pleasanton City Council invited interested members of the community to participate in a review of the industrial components of the

City's General Plan in light of recent approval of several large business park developments. The **Industrial General Plan Review Committee** consisted of 150 residents and property owners who deliberated for 18 months in producing a document containing recommendations for future industrial growth and related aspects of the City's General Plan (3). The Committee's major recommendations included redesignating 450 acres of industrial, commercial and office land to residential uses; forming a citizens committee to study the corresponding residential aspects of the General Plan; and rewriting the entire 1000 page General Plan into a concise, updated document.

Following the Industrial General Plan Review Committee's recommendations, the City Council hired a consultant to rewrite the General Plan document, initiated General Plan Amendments encompassing the citizens' land use recommendations and invited members of the community to participate in a review of the residential aspects of the City's General Plan. The **Residential Review Committee** consisted of 65 members who deliberated for six months to produce a document containing recommendations for future residential development and related aspects of the General Plan (4). The Committee's major recommendations included a substantial increase in housing units throughout the City; an expansion of Pleasanton's Planning Area for possible residential uses; revisions to the City's Housing Element to encourage affordable housing; and a revision of the City's Growth Management Program to allow for increased yearly housing production to meet escalating housing demand.

Both Committees' recommendations were evaluated by staff, discussed at public meetings and a majority of the **citizens' proposals** were adopted by the City Council. The citizens' recommendations were incorporated into several land use and policy reports (5) and reviewed at joint meetings of the City Council, Planning Commission and members of the public in the Fall of 1985. City officials selected preliminary land uses and directed City staff and their consultant to prepare a draft General Plan document incorporating those land uses and to evaluate their effects on the community in an Environmental Impact Report (EIR). The Draft General Plan document (6) and EIR (7) currently are being circulated for public comment, will be discussed at length at public hearings and amended accordingly. The final General Plan is expected to be adopted in September 1986.

LOCATION AND BOUNDARIES

Regional Context

The Bay Area is one of the largest and most diverse metropolitan regions in the United States and consists of the nine counties bordering San Francisco Bay. Pleasanton is an integral part of the Bay Area and is affected by its economic and developmental trends. Pleasanton's current activity can be explained largely

by its location within the **I-680 corridor**, the fastest growing part of the Bay Area. Pleasanton's attraction of business parks is a significant example of the regional trend toward locating jobs in suburban areas, closer to the available workforce. One of the major challenges facing Pleasanton and other suburban locations in the future will be the provision of a sufficient supply of affordable housing within commuting distance of suburban jobs, according to the Association of Bay Area Governments (ABAG)(8). Pleasanton's position relative to Alameda County and the Bay Area is summarized in Table I-2 and Figure I-1 (9).

Planning Boundaries

Pleasanton is strategically located at the intersection of Interstate Highways 580 and 680 within the Amador Valley. Located about 35 miles southeast of San Francisco, Pleasanton is part of the **Tri-Valley Area**, a rapidly growing corridor within the nine county Bay Area. Figure I-2 illustrates important boundaries within the Pleasanton Planning Area.

The Pleasanton **Planning Area** is a 43 square mile (27,500 acre) area within which the City of Pleasanton designates the future use of lands which "bear relation to its planning." Land uses are designated on the General Plan Map (inside cover) for the entire Planning Area even though much of this land is unincorporated and lies within the jurisdictional authority of Alameda County.

Outside of this Planning Area, the City has designated an additional 31 square miles (20,000 acres) as an **Expanded Planning Area**. The City is exploring the feasibility of extending City services to this area but has not designated land uses within the Expanded Planning Area nor adopted policies to guide decisions in this area, within this General Plan Document.

Within the Planning Area lies Pleasanton's **Sphere-of-Influence**, a 28 square mile (18,000 acre) area adopted by the Alameda County Local Agency Formation Commission (LAFCO) which represents "a plan for the probable ultimate physical boundaries and service area" of Pleasanton. The Sphere-Of-Influence contains unincorporated lands over which Alameda County has zoning control as well as lands incorporated within the City limits of Pleasanton.

The incorporated **City limits** of Pleasanton is a 15 square mile (10,000 acre) area over which Pleasanton exercises zoning control and police powers and provides public services such as water, sewer, police and fire services. Only those areas in which landowners representing a majority of the value of the land who favor incorporation may be annexed to the City. Pleasanton's City limits may change any time landowners apply for, and the City agrees to, annexation (10).

Geography

The urbanized portion of the Planning Area lies predominately on flat land originally formed by alluvial deposits from prehistoric streams flowing through the Livermore, Amador and San Ramon Valleys to the Sacramento River. Geologic activity in the area resulted in varying deposits of sand and gravel, in the northeastern portion of the Planning Area, and clay and silt. As a result, the sand and gravel deposited along the Arroyo Mocho and the Arroyo Del Valle comprise the major resource for sand and gravel harvesting in the San Francisco Bay Area. Prime agricultural soils which once supported the cultivation of hops, barley, grapes and livestock, have mostly succumbed to urbanization except for a few vineyards at the eastern edge of the Planning Area and some livestock grazing on Pleasanton Ridge and in the Southeastern Hills.

Pleasanton is enclosed by hills on the west and southeast (Figure I-3). The Pleasanton and Main Ridges on the west rise sharply above Foothill Road to peaks of 1500 feet, lending a majestic backdrop to the Planning Area. The two ridges remain seismically active and feature complex terrain, densely wooded vegetation, and landslide prone soils which support minimal development on upper elevations. A series of gently rolling hills extend south of Pleasanton interrupted only by the narrow valley containing Vallecitos Road, the southern boundary of the Planning Area.

Community Profile

As of January 1, 1986 the City of Pleasanton supported a **population of 45,371** and provided **20,000 jobs** within its City limits of approximately 15 square miles. The population is primarily white, professional and family-oriented, with fewer ethnic, lower-income or single households than other communities in the Bay Area. The housing stock is newer, larger and built at lower densities than communities located closer to the San Francisco-Oakland core. The City is at a distinct locational advantage situated at the intersection of two major freeways, surrounded by open space and mineral resources, proximate to a skilled labor force and home to several major corporate offices, hotels, research organizations and public facilities.

Perhaps Pleasanton's most distinguishing characteristic is the physical separation it provides between large employment centers located at the edge of the City along the freeways and the older, compact downtown surrounded by modern, well-planned residential neighborhoods with a distinct small-town character. Pleasanton is a **distinct community** which is physically separated from neighboring jurisdictions by hills, freeways and quarries.

Definitions: The **Pleasanton General Plan** is referred to throughout this document interchangeably with the terms **The Plan, The Pleasanton Plan, and The General Plan.** The Pleasanton Plan describes existing and future conditions within and establishes City policies which affect the 43 square mile area referred to as the Existing Planning Area.

Footnotes

- (1) California Government Code Section 65300 et. seq.
- (2) The former General Plan consisted of the following documents
 - a. Land Use and Circulation Element - Adopted 02-09-76
 - b. Housing Element - 10-26-82 (Updated 06-26-84)
 - c. Conservation and Open Space Element - 02-09-76
 - d. Seismic Safety Element - 02-09-76
 - e. Noise Element - 02-09-76
 - f. Scenic Highways Element - 02-09-76
 - g. Safety Element - 05-23-78
 - h. Growth Management Element - 03-06-78
 - i. Human Services Element - 02-09-76
 - j. Environmental Element - 02-09-76
 - k. Economic Element - 02-09-76
 - l. General Plan Supplement - 02-09-76
 - m. General Plan Map and Amendments
- (3) Industrial General Plan Review Committee, Recommendations for Future Industrial Growth, January 1984
- (4) Residential Review Committee, Recommendations for Future Residential Development, July 1985
- (5a) City of Pleasanton, Staff Report 85:437 - Major Policy Issues Involved in Adopting a New General Plan, September 9, 1985
- (5b) City of Pleasanton, Staff Report 85:501 - Land Use Proposals for Possible Inclusion in the City's New General Plan, October 14, 1985
- (5c) City of Pleasanton, Staff Report 85:573 - Possible Revisions to the City's Residential Growth Management Policies, November 18, 1985
- (5d) City of Pleasanton, Staff Report 85:590 - Proposed Revisions to the City's General Plan, December 1985
- (5e) City of Pleasanton, Summary of Proposed General Plan Revisions, December 20, 1985
- (6) Chandler W. Lee, The Pleasanton Plan - Draft, June 1986
- (7) The Planning Collaborative, The Pleasanton Plan - Draft EIR June 1986
- (8) Association of Bay Area Governments, Projections 85, July 1985
- (9) A more detailed inventory of the relationship of Pleasanton to the Tri-Valley subregion and the Bay region is contained in: Christopher Owens, Hacienda Business Park Phase II - Draft EIR, October 1985
- (10) City of Pleasanton, Annexation Procedures, 1986

TABLE I-1

LOCATION OF REQUIRED ELEMENTS

<u>State Required General Plan Element (1)</u>	<u>Equivalent Element in Pleasanton Plan</u>
Land Use (CGC §65302(a))	Chapter II: Land Use
Circulation (CGC §65302(b))	Chapter III: Circulation
Housing (CGC §65302(c))	Chapter IV: Housing
Conservation (CGC §65302(d))	Chapter VII: Conservation & Open Space
Open Space (CGC §65302(e))	Chapter VII: Conservation & Open Space
Public Health & Safety (Safety & Seismic Safety) (CGC §65302(f))	Chapter V: Public Safety
Noise (CGC §65302(g))	Chapter VIII: Noise Element
<u>Optional Elements</u>	
	Chapter IV: Public Facilities Element
	Chapter IX: Air Quality Element

(1) The following citations refer to applicable sections of the California Government Code

TABLE I-2

PLEASANTON AND BAY AREA TRENDS

	<u>Pleasanton (1)</u>	<u>Alameda County</u>	<u>Bay Area</u>
Land Area	15 sq. mi.	1,062 sq. mi.	7,178 sq. mi.
1985 Population	40,740	1,179,150	5,521,000
2005 Population	72,700	1,406,000	6,517,000
1985 Employment	13,900 (2)	549,700	2,780,500
2005 Employment	51,100	778,900	3,912,000
1985 Avg. Income(3)	\$34,300	\$25,600	\$28,700
2005 Avg. Income(3)	\$38,900	\$30,000	\$35,900

(1) Incorporated City Limits

(2) ABAG's employment estimates vary from others used by the City which estimate existing employment to be about 20,000

(3) Average household income in 1980 constant dollars

Source: Association of Bay Area Governments, Projections-85, July 1985

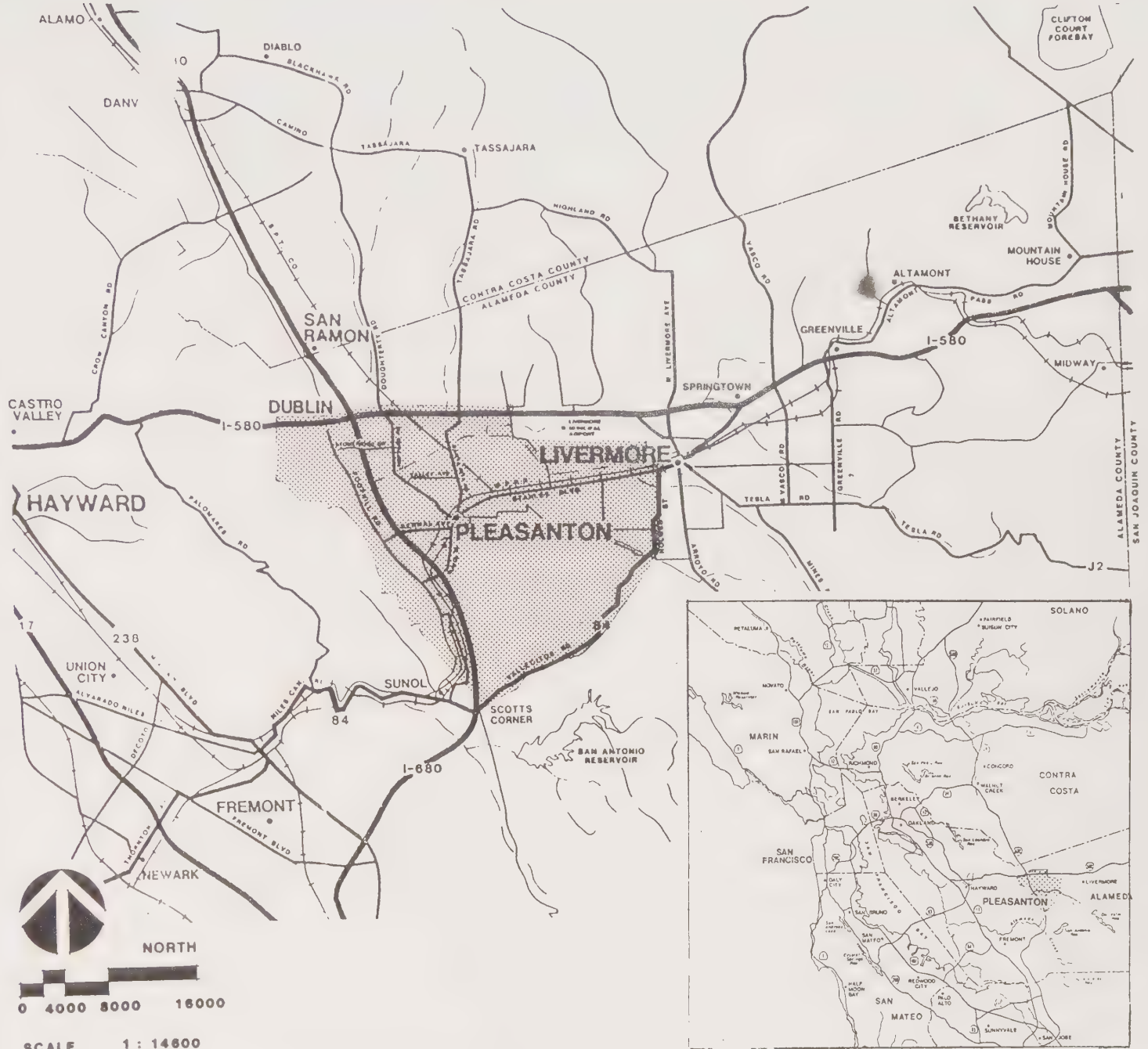


Figure I-1

PLEASANTON AND THE TRI-VALLEY AREA



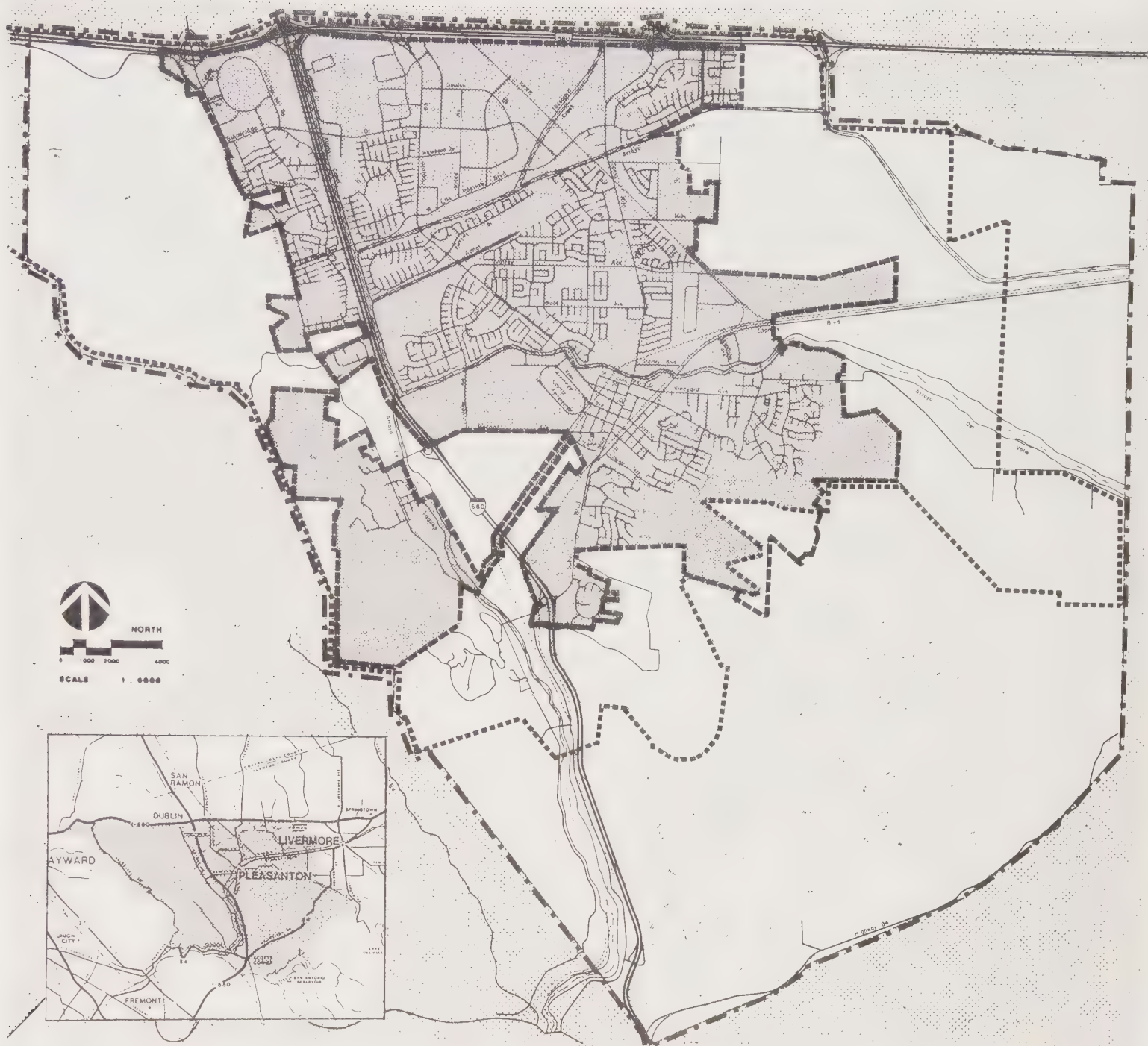


Figure I-2

PLANNING BOUNDARIES





-  **City Limit**
-  **Sphere of Influence**
-  **Planning Area**
-  **Expanded Planning Area (inset map)**





Figure I-3

EXISTING FEATURES



Source: MacKay & Soms

II. LAND USE ELEMENT

PURPOSE OF THE LAND USE ELEMENT

The Land Use Element contains policies and a map indicating the planned location, amount and intensity of residential, commercial, industrial, public, and open space lands. The following **land use policies** need to be considered together with the **land use map** to assess the City's intentions for future development and conservation within the community. The land use map implements the goals and policies contained throughout the Pleasanton Plan.

The policies contained in the Land Use Element are intended to be compatible with policies in other elements of the General Plan. These policies are purposefully general to guide interpretation of the land use map. The land use map carries out the intent of the land use policies in graphic form. The map is a general and flexible illustration of the City's intentions for a desirable pattern of land use throughout the Planning Area. The map is designed to be flexible to permit changes in land uses over time while maintaining consistency with City goals and policies.

EXISTING AND FUTURE CONDITIONS

As of 1986, Pleasanton was well on its way to achieving its goal of a complete and well rounded community (see Land Use Goals, Policies and Programs). A recent study ranked Pleasanton as the fastest growing City in Northern California using a combined growth index which includes population, residential and commercial construction and retail sales (1). This recent growth has provided the City with more jobs, more shops and services, more parks and community facilities - all the ingredients of a complete community. An analysis of Pleasanton's **existing land uses** provides an interesting insight into those elements of the Community which should be preserved and those elements which could be improved to meet the City's goals and policies. The following summarizes existing conditions and future plans for various land uses within the Planning Area.

Residential Neighborhoods

The reason most newcomers cite for relocating to Pleasanton is its attractive, well planned neighborhoods. Pleasanton currently consists of **45 neighborhoods** which offer a wide variety of environments and lifestyles (Table II-1). The oldest neighborhood in the City is Downtown (Figure II-1) which features buildings dating back to the 1860's. New neighborhoods are being built every year, mostly at the edge of town. Due to the City's layout, existing neighborhoods are rarely affected by new development, allowing Pleasanton to preserve its existing

residential character while accommodating needed growth and change.

Viewing a recent aerial photograph of Pleasanton reveals many things about the community's residential character. The City's **street network** features few major arterials, thus minimizing the number of residents exposed to heavy traffic and noise. Most homes front on minor collector streets and cul-de-sacs which meander through the community and create quiet, safe environments.

The street pattern carves out distinct neighborhoods each having a **diversity of uses**: housing, a local park, an elementary school and access to retail and community services. Most neighborhoods have a variety of architectural styles, a wealth of landscaping and street trees, sidewalks and bicycle paths. Landscaping alone can distinguish among neighborhoods as evidenced by the difference in newer and older neighborhoods in the aerial photograph.

As of January 1986, Pleasanton was home to about **45,371 residents** within the City limits, and an additional 1500 in unincorporated places (e.g., Castlewood) within the Planning Area. Pleasanton residents occupy about 14,800 of the 15,299 total housing units, yielding a vacancy rate of 3.26%. The average size of Pleasanton households is 3.06 persons per housing unit, ranging from an average of 2.01 for multiple family to 3.33 for single family housing.

Another aspect of Pleasanton's residential environment is the separation between residential and non-residential uses. Major business parks are all located at the periphery of town as are the sand and gravel pits and freeways. Such a land use pattern minimizes incompatibility among land uses such as that which would occur when homes are located next to a factory. This **compatibility among land uses** provides the quiet, safe and attractive environment which makes Pleasanton's neighborhoods so livable.

In the future, Pleasanton will grow to hold a population of about 74,000 within the existing Planning Area and possibly another 11,000 people within the Expanded Planning Area. The City's **Growth Management Program** (see Housing Element) limits future residential growth to an average of 650 housing units, or about 2,000 persons, per year. At this rate, Pleasanton will reach a population of 60,000 by about the year 1995 and won't achieve **buildout** of all residential areas in the Planning Area until 2003 or later. These projections depend on many factors including the national and local economies, Tri-Valley job growth, household size, commute patterns, etc.

Industrial, Commercial and Office Developments

Prior to 1980, Pleasanton was a predominantly residential community with few employment opportunities. Since 1980, the City has built or approved a regional shopping mall (Stoneridge), seven major **business parks**, five major hotels and a variety of retail, office and service centers (Table II-2 and Figure II-2). All of these projects generate jobs for Pleasanton residents and people from other communities. Pleasanton's economy supports both basic industries, such as sand and gravel harvesting, which export its product out of the community, and non-basic industries, such as local shops and services, which mainly serve people within the community. All industries are subject to strict standards relating to traffic, air quality, noise, water, sewer and hazardous waste and are monitored by City staff and the City's Environmental Monitoring Committee (2).

As of 1985, Pleasanton contained about 1800 businesses which collectively employed about 18,000 full and part time workers. Approximately 35% of these workers lived in Pleasanton, another 28% lived elsewhere in the Tri-Valley, and the remainder commuted from elsewhere in the Bay Area (3). The location of people's place of work compared with their place of residence plays a crucial role in traffic patterns, commuting time, energy consumption, noise and air pollution.

In the future, Pleasanton will grow to support an employment base of about 79,000 workers, assuming buildout of all lands on the General Plan Map at average densities (Tables II-3 and II-4). These workers will represent a wide range of professional, managerial, clerical and other jobs in a variety of industries.

Employment is expected to grow at an average rate of about 2,450 jobs per year over the next 10 years. At this rate of **employment growth**, Pleasanton will reach an employment base of 44,600 by the year 1995. Buildout of all employment uses probably won't occur until the year 2015 or later.

Community Facilities

One of Pleasanton's distinguishing characteristics is its provision of **community facilities**. Most every neighborhood features a school, a park and a church within walking distance of its residents. In addition, Pleasanton offers several large facilities which serve the entire community such as the County Fairgrounds, Pleasanton Sports Park, Century House, and the Civic Center. Many neighborhood and community-wide facilities serve multiple functions in meeting the recreational, social and cultural needs of the community. Meeting rooms are provided in City Hall and hotels, recreational activities take place in school playgrounds, educational and social programs are offered at churches and City buildings. The Pleasanton Department of Parks and Community Services sponsors recreational, educational

and cultural programs in these facilities which are enjoyed by thousands of residents, year round.

Currently, Pleasanton's public facilities are being expanded to accommodate its burgeoning population and employment base. The City has budgeted for a new library and corporation yard, for example, and recently has constructed new police and fire stations. A list of existing community facilities is contained in Tables II-5 and II-6 and located in Figures II-3 and II-4. In the next few years, the City will be expanding public facilities to accommodate its transformation from a small to a medium sized city.

In the future, the City will need not only larger facilities, but also a greater variety of facilities to serve its larger and more diverse population. Facilities which may be required in a city of 74,000 include a civic center, additional community parks, community centers, a municipal golf course, gymnasium and senior center. The General Plan Map allocates potential sites for these uses.

Open Space Areas

Pleasanton is blessed with an abundance of open space areas. The developed areas of the Valley floor are surrounded by essentially undeveloped land on **Pleasanton Ridge**, in the **Southeast Hills**, in the **Sand and Gravel Quarries**, and in the **Vineyards** along the eastern stretches of Vineyard Avenue. In addition, the City is interspersed with numerous neighborhood and community parks as shown in Figure II-5 and Table II-7.

Pleasanton acquires and improves its **parks** through its park dedication ordinance which enables the City to collect land or "in-lieu fees" as a condition of approving residential developments. Many of the City's neighborhood parks were acquired and developed using this technique. Pleasanton Sports Park, on the other hand, was acquired through an agreement with the U.S. Department of the Interior. Shadow Cliffs was acquired and is operated by the East Bay Regional Parks District through property taxes used to purchase reclaimed sand and gravel pits. The Walter Johnson Park atop Pleasanton Ridge was acquired by the City through a donation by the Walter C. Johnson Foundation.

In the future, the City will need additional park sites and facilities in the areas of Pleasanton Ridge, the Southeast Hills, El Charro Road, San Francisco Water Department land and other areas shown on the General Plan Map. The acquisition and improvement of future community parks will require means other than the Park Dedication Ordinance such as dedication as part of future developments. In addition, the City will continue to require the provision of private open space within residential developments to serve the needs of neighborhood residents.

GENERAL PLAN LAND USES

The General Plan establishes thirteen **land use categories** with which development must be consistent. The **General Plan Map** indicates the general types of land uses allowed within each category and illustrates the general location where those uses are allowed within the Planning Area. Any proposed project which does not conform to the land use designation shown on the General Plan Map must receive a **General Plan Amendment** to an appropriate designation before the project can be approved by the City Council. Amendments to the General Plan are allowed up to four times per year.

The City's **zoning ordinance** further defines land use types and densities, building height, parking and other requirements of development. Proposed projects which do not conform to these requirements must obtain a rezoning or a zoning variance before receiving development approval. Zoning designations must be consistent with the General Plan land use map. The following is a general description of the land uses allowed under the Pleasanton General Plan. Any use allowed within the zoning district underlying a particular General Plan designation shall be allowed by the General Plan.

In calculating the **holding capacity** of an individual parcel, future projects should be guided by the assumed densities shown in Table II-4 multiplied by the number of gross acres within each residential land use category. These assumed densities were used to calculate the holding capacity of the Pleasanton Plan and resulting levels of traffic, noise and air quality.

Residential projects on land designated Rural, Low and Medium Density Residential which propose densities greater than those assumed in this plan shall not exceed the maximum density allowed under the General Plan designation for any distinct portion of the site, should be zoned Planned Unit Development (PUD) and should include public amenities sufficient to justify the added density. Residential projects which propose densities exceeding the maximum on any portion of the site greater than one acre shall require a General Plan Amendment so that all portions of the site are within the density range for the applicable General Plan designation. The density of High Density Residential projects shall be determined by the underlying zoning designation. PUD zoning shall be encouraged on High Density Residential sites of particular interest to enable a desirable balance of density and amenities. **Gross acres** shall not include any area designated for non-development use such as Public Health and Safety areas, major thoroughfares, arroyos, creeks and railroad rights-of-way but may include collector and local streets and utility easements.

Industrial, Commercial and Office projects normally should conform to the densities assumed in Table II-4. Projects

proposing densities greater than those assumed in Table II-4 may be allowed up to the maximum indicated below provided that sufficient amenities and mitigations are incorporated into the project to justify the increased density.

Residential Areas

Rural Density Residential - Less than .2 dwelling units (and less than 1 person) per gross acre. Clustering of development shall be encouraged with lots of 1/2 acre and larger.

Low Density Residential - Less than 2 dwelling units (and less than 8 persons) per gross acre.

Medium Density Residential - Between 2 and 9 dwelling units (and between 4 and 36 persons) per gross acre.

High Density Residential - Greater than 9 dwelling units (and greater than 13 persons) per gross acre.

Any housing type (detached and attached single family homes, duplexes, townhouses, condominiums and apartments) in addition to churches, schools, day care facilities, and other community facilities may be allowed in any of the residential designations provided that all requirements of the Zoning Code are met.

Industrial, Commercial and Offices

Commercial and Offices (Retail, Highway and Service Commercial; Business and Professional Offices) - Floor Area Ratios (FARs) not to exceed .6, except for hotels or motels which should not exceed .7 and projects within the Central Business District (CBD) which should not exceed 2.0. Certain uses, such as mini-warehouses, where employee density and traffic generation are minimal, may be allowed with higher FARs provided they are submitted as a Planned Unit Developments (PUDs) and meet all other City requirements.

General and Limited Industrial - FARs not to exceed .5. Certain uses, such as mini-warehouses, where employee density and traffic generation are minimal, may be allowed with higher FARs provided they are submitted as a Planned Unit Developments (PUDs) and meet all other City requirements.

Sand and Gravel Harvesting - Land or building used for the extraction of mineral resources and related low intensity activities such as ready-mix facilities and asphalt batch plants. No significant development is allowed in these areas.

Business Park (Industrial, Commercial and Offices) - FARs not to exceed those for the individual land uses specified for General & Limited Industrial and Commercial & Office.

Community Facilities

Public and Institutional - Any public or institutional use including churches, cemeteries, corporation yards, sewage treatment facilities, utility substations, hospitals, post offices, community centers, City Hall. FARs not to exceed .6. Certain uses, such as mini-warehouses, where employee density and traffic generation are minimal, may be allowed with higher FARs provided they are submitted as a Planned Unit Developments (PUDs) and meet all other City requirements.

Schools - Any public or private educational facility.

Open Space

Parks and Recreation - Neighborhood, Community or Regional Parks. No significant development is allowed in these areas.

Agriculture and Grazing - Land or buildings used for the production of agriculture or the grazing of animals. No significant development is allowed in these areas.

Public Health and Safety - Land set aside for the protection of the public health and safety due to geologic, topography, fire or other hazards. No development is allowed in these areas other than single family homes on existing lots of record as of January 1, 1985 which meet City requirements for access, public safety, building site, architectural design, etc.

Areas of Special Concern

Pleasanton Ridge

The area west of Foothill Road on the eastern face of Pleasanton and Main Ridges is characterized by scattered low density, large lot, single family residential development surrounded by large tracts of mostly steep and wooded hillsides with portions of flatter grassland used for grazing. Although Pleasanton Ridge is primarily **open space**, most of it is privately owned landholdings of 100 acres and larger. Pleasanton Ridge is of special concern to Valley residents because of its prominent ridgetop and slopes, its steeply undulating terrain and its wooded vegetation, all visible from Pleasanton. In addition, the ridge is fraught with unstable soils, landslide deposits and earthquake fault traces.

The portion of Pleasanton Ridge which lies adjacent to Foothill Road historically has been, and continues to be, a desirable **residential area**. Several projects located on the lower slopes of the ridge provide examples of attractive development which combine clustered, view homes with open space in visually unobtrusive designs. Much of this attractiveness has to do with landscaping and integrating development into the natural setting of the Ridge. Other developments which are not so carefully

designed provide the major objection to future development on the Ridge.

To accommodate a mix of residential, recreational and open space uses which are sensitive to the unique character of Pleasanton Ridge, four separate land use designations are proposed for different areas of the Ridge.

1. **Low Density Residential** development is planned for 1,028 acres west of Foothill Road. At maximum densities of 2 units per acre, this designation is intended to allow large lot, single family residential development on relatively flat or rolling terrain with good access to Foothill Road.

2. **Rural Density Residential** development is planned for about 247 acres of the Ridge less than 670 feet in elevation and less than 25% slope. At maximum densities of 1 unit per 5 acres, this designation is intended to allow clustering of residences, up to half acre lots, so that homes can be sited on relatively flat areas with good access. Steeper, more hazardous areas should be preserved as open space.

3. **Public Health & Safety** is an open space designation planned for 3300 acres of the Ridge greater than 670 feet in elevation or greater than 25% in slope. No holding capacity is allowed within this designation in order to preserve areas of steep slopes, unstable soils or geologic hazards. However, single residences on existing lots of record are allowed following site review.

4. **Parks & Recreation** is an open space designation planned for about 630 acres including the Augustine Bernal Park, parts of Castlewood Country Club and a linear park atop the Ridge intended for use as a hiking and equestrian trail. Additional parks may be desired in the future in the areas of the old Moller quarry and on property owned by the East Bay Regional Parks District which has adopted a policy in support of a regional park on Pleasanton Ridge.

Taken together, the various land uses planned for Pleasanton Ridge form a complementary pattern of development and conservation which will provide Pleasanton with opportunities for custom homes, recreation, open space and preservation of the City's most visible resource.

Southeast Pleasanton

This area is characterized by **rolling hills** used predominantly for grazing land with some low density residential uses recently constructed on the lower slopes and agricultural lands on the flatter eastern portions. The General Electric Vallecitos Nuclear Research Center dominates the largely undeveloped Vallecitos Valley in the southern portion along Highway 84.

The General Plan designates about 70% or about 5600 acres of this area as Public Health and Safety with no development capacity other than single family homes on existing lots of record. This designation covers the steeper slopes, higher elevations and areas subject to landslides and other hazards. Flatter, more developable areas are designated as Low Density Residential and close-in hilly areas are designated as Rural Density Residential (700 acres) to encourage clustering of large lot, custom homes suitable to this terrain.

About 1350 acres in Southeast Pleasanton are designated as Agriculture & Grazing to encourage the cultivation of grapes or other agricultural products in the Ruby Hills area and to act as a buffer surrounding the Vallecitos Nuclear Center. The remaining 120 acres are devoted to General & Limited Industrial uses for the GE Facility and some Low Density Residential to the west of that facility in an area of existing single family homes.

Downtown

Downtown is the heart of Pleasanton and is located at the center of the Planning Area. It contains the City's oldest neighborhoods and it embodies the image of Pleasanton as a friendly, well planned community.

The area surrounding **Main Street** features the City's oldest buildings, its most established neighborhoods, emblematic tree lined streets and an identifiable image as a commercial district replete with wooden walkways, colorful awnings, historic storefronts and a western motif. Presently, a mix of residential developments and a variety of commercial uses coexist in the downtown area.

Pleasanton's Downtown has served many functions over the past 120 years including a railroad depot, agricultural exchange center and community shopping area. Now that Pleasanton is being transformed from a residential community to a full service City, Downtown will have to change with it. At the same time, Downtown contains many of the historic features of the community which should be preserved because of their architectural design, historic value or contribution of community character. The challenge of Downtown is to find ways to integrate the changes needed to serve the City's growing population and employment base and still preserve the essence of its **small town character**.

In the near future, pressure will increase to expand retail, office and restaurant facilities in the downtown area. The small size of the business district, the limited circulation system and the need for parking may restrict the growth of Downtown and its attractiveness as a commercial center. Therefore, a plan for Downtown is needed which provides for retail expansion, additional housing and an improved transportation and parking system.

As can be seen by the land use designation on the Land Use Map, the General Plan is an inadequate mechanism to address the complexities inherent in Downtown. Many cities, in fact, have a separate plan for their downtowns which provide solutions on a parcel by parcel basis. This General Plan recognizes the discrepancy in scale between a Planning Area that spans 43 square miles and a downtown area whose activities are contained in just a few blocks.

Therefore, this General Plan proposes that a **Specific Plan** be prepared for the downtown area which analyzes parcel specific information and recommends locally sensitive solutions to improve the future of Downtown. The Specific Plan will contain site specific recommendations for residential and commercial uses, circulation and parking, design and landscaping, as well as mechanisms to finance and implement the Plan's recommendations. Future development will be required to be consistent with the specifications contained in the Plan.

Sand and Gravel

The eastern portion of the Planning Area contains the largest deposits of sand and gravel in the entire Bay Area. This area is of special concern because of the value of these mineral deposits to the region's economy, the effects of extracting and transporting sand and gravel on the local environment, and the manner in which excavated land is reclaimed for future uses.

The sand and gravel extracted from Pleasanton's quarries is used for buildings and improvements throughout the Bay Area. The materials are transported in trucks from the quarries along Stanley Boulevard-First Street-Sunol Boulevard Corridor and along El Charro Road. After 1995, all **gravel trucks** will be required to use El Charro Road in order to reduce noise, dust and congestion along First Street.

Alameda County, within whose jurisdiction the gravel areas are located, has adopted a **Reclamation Plan** (4) which indicates the extent of harvesting operations and determines future uses suitable for land once its deposits have been extracted. The Reclamation Plan essentially calls for an open space and recreation resource known as the Chain of Lakes - a series of open gravel pits filled with ground water after sand and gravel deposits have been extracted. Shadow Cliffs Regional Park is an example of how these pits can be reused, although not all of these areas are suitable for such high intensity recreational use. In addition, the Reclamation Plan calls for limited areas which can be reused for development, such as light industrial, if there is a need for such uses in the future.

Expanded Planning Area

The Expanded Planning Area (Figure I-2) is a 20,000 acre area surrounding the existing Planning Area boundary on the west,

south and southeast. The Expanded Planning Area was developed by a citizens committee charged with examining those areas which influence or are influenced by the City of Pleasanton. This 20,000 acre area is designated as a "Study Zone" in the General Plan to establish Pleasanton's interest in controlling the area and to initiate **specific studies** of access, utilities, public services, environmental constraints, future land uses and holding capacity.

No land use nor policy designations are made in this area purposefully before more information can be generated as to the suitability and type of development or preservation which is most appropriate to the area. Therefore, the Expanded Planning Area is not technically part of this General Plan. The specific area studies should consider all compatible land uses, including housing, parks, community facilities, and open space. The western expansion area will be given first priority for these studies with the other areas to be analyzed as local interest dictates.

HOLDING CAPACITY

Holding Capacity is the ultimate size of a community that can be accommodated if all land uses shown on the General Plan Map were to be built. Any amendments to the General Plan Map will, in turn, affect Pleasanton's holding capacity. Capacity is expressed in terms of population, housing units, square footage and jobs at **buildout**, twenty or more years from now.

If all the **residential land** shown on the General Plan Map were built out, Pleasanton would contain approximately 26,900 housing units which would support a residential population of about 74,000 persons. This holding capacity estimate assumes that residential land uses are built to average densities (Table II-4), vacancy rates will average 4% and household size will level off at 2.87 persons per household.

If all the Industrial, Commercial, Office and other **employment generating land** were built out, Pleasanton would contain approximately 28 million square feet of building floor area - enough to support about 79,000 jobs. This holding capacity estimate assumes that employment generating uses are built at average densities (Table II-4), vacancy rates average 7% and employment densities will approximate current levels (Table II-3). Table II-8 summarizes the holding capacities of each land use designated within the Pleasanton Planning Area.

In addition to the existing Planning Area, a maximum holding capacity has been estimated for the **Expanded Planning Area**. Although specific studies have not been conducted for these areas to determine whether they can support any development, it has been assumed that the maximum holding capacity which can be supported in this area is 4,000 housing units. This was derived by assuming an average density of 1 unit per 5 acres throughout

the 20,000 acre Expanded Planning Area which contains topography similar to those portions of the Planning Area designated as Rural Density Residential. If such development should occur, some retail services might be needed, but because employment would be negligible, job generation in this area was not estimated.

The holding capacity of the Expanded Planning Area has not been included in the calculation of holding capacity of the Existing Planning Area due to the lack of site specific studies and land use designations required to make a reasonable calculation and the fact that the area is not part of the Planning Area. Existing densities in this area range from one unit per acre in parts of Hayward to one unit per 100 acres in parts of Alameda County.

Population and Employment Projections

Residential growth in Pleasanton is controlled by the City's Growth Management Program (5) which allocates an average of 650 housing units per year based on an assessment of infrastructure capacity and other factors (6). Assuming this rate of growth will be sustained, projections of population growth can be made to buildout of the General Plan. As shown in Figure II-6, Pleasanton can be expected to reach a population of 60,000 by the year 1995, and reach its holding capacity of 74,000 within the existing Planning Area around the year 2004, assuming current trends continue. These projections are compared with projections made by the Association of Bay Area Governments (ABAG) (7).

Employment growth in Pleasanton is not subject directly to growth management although the effects of employment growth, such as traffic, noise and air quality, are monitored and subject to adopted standards. Gruen Gruen + Associates (8) has projected employment growth using a mathematical model which takes into account the demand for building space over time, the amount of existing vacant building space, and developers' propensity to invest in industrial, commercial and office buildings. Figure II-7 illustrates these projections for Pleasanton's share of future employment growth and compares them with projections prepared by ABAG.

Existing employment in Pleasanton has been estimated by City staff to be 17,000 to 18,000 based on City business licenses and TSM Ordinance (9) survey results. Because ABAG's projections assume 1985 employment much lower (13,900) than City estimates, the City uses estimates by Gruen Gruen + Associates which have calculated 1985 employment to be 18,000 to 20,000 jobs, both full and part time. This estimate was made by surveying existing occupied buildings and applying average employment densities to various employment generating uses such as offices, retail and industrial. The following projections are based on Gruen's assumptions. Figure II-7 shows these **employment projections** over the next 25 years. By the year 1990, Pleasanton can be expected

to support a total of 34,400 jobs; by the year 2000, 52,000 jobs and by the year 2010, 65,000 jobs. If this rate of employment growth were to continue, buildout of all employment generating uses would occur sometime after the year 2015.

The Relationship of Jobs and Housing

The relationship between **jobs and housing** is a complex and often misunderstood issue which affects all communities especially those, like Pleasanton, within large metropolitan areas. Workers choose jobs and residential locations based on a variety of personal, financial and locational factors, not simply on the basis of commute time or distance. Therefore, a certain percentage of workers will choose to live and work within the same community, such as Pleasanton, a certain percentage within the same commute area, such as the Tri-Valley, and a certain percentage will choose to live great distances away from their place of employment. The essence of the jobs/housing issue is to recognize these different types of **commute behavior** and provide adequate housing opportunities within the commute area desired by each group of workers.

Planning to accommodate this diversity of commute patterns involves identifying and providing for employment generated **housing needs** on three geographic levels - the community, such as Pleasanton, the commute area, such as the Tri-Valley, and the region, such as the Bay Area. State law (10) (11) recognizes each city's responsibility to accommodate employment generated housing needs. From a practical perspective, fulfillment of this responsibility is a regional concern which must allow for the locational differences and varying needs among communities within larger commute areas. Pleasanton, for example, contains large areas of flat land located at the intersection of two major freeways and is realizing its locational advantages to become an **employment center** within the Tri-Valley area. Other cities, like Danville or Alamo, enjoy a setting more conducive to development as primarily residential communities.

Planning for a balance of jobs and housing within the Tri-Valley commute area, and not necessarily within each jurisdiction, allows each community to best use its own resources and develop its own identity while ensuring an adequate supply of housing within a reasonable commuting distance of Tri-Valley jobs. Pleasanton has adopted this area-wide approach to the jobs/housing issue and has taken significant steps to contribute its share of **Tri-Valley housing** while retaining its role as an employment center.

The Pleasanton Plan provides for the varied housing needs of people who live and work in the community by designating a wide range of residential densities and adopting policies aimed at all economic segments of the community. The designation of high density residential land within and adjacent to business parks is a notable example of the City's efforts.

The City also provides jobs in several large business parks for people wishing to live within other communities. The designation of land for business park use in locations convenient to freeways, arterials and transit corridors in North Pleasanton is a good example.

The City also provides a wide range of housing opportunities for people who choose to commute out of Pleasanton to work. The wide range of housing types and prices provided by the City's distribution of rural, low, medium and high density housing is a notable example.

The City's policies to increase its proportion of high density housing, to maintain a minimum percentage of rental units, and to encourage low income housing through exemptions to its Growth Management Program are examples of the City's efforts to help meet the affordable housing needs of workers in Pleasanton, the Tri-Valley area and other locations. Pleasanton's strategy to provide housing and employment opportunities to meet the full range of commute behavior is the key to ensuring a functional distribution of jobs and housing in the Tri-Valley area.

Two large **citizens committees** deliberated for several years to develop a series of recommendations aimed at improving the relationship between jobs and housing within the Tri-Valley area. Their recommendations, most of which are included in the Land Use and Circulation Elements of this document, include redesignating 500 acres of potential business parks to residential use, increasing residential densities close to employment centers, expanding housing opportunities for low and moderate income workers, increasing the amount of housing within the Planning Area by 3,400 units and decreasing the amount of employment by 6,000 jobs.

The City also has participated in a study of future housing and employment growth (12) and an inventory of vacant land throughout the Tri-Valley area (13), both of which are incorporated by reference, which will help all communities in the area to identify and meet **future housing needs**. The City has followed the recommendations of regional agencies to take steps to improve the relationship between jobs and housing in its General Plan (14). The goals, policies and programs contained in the Pleasanton Plan address Pleasanton's role in cooperating with other jurisdictions to provide for a functional distribution of jobs and housing within the Tri-Valley while allowing the City to develop into the type of community desired by its citizens.

Land Use Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

II. LAND USE GOALS, POLICIES AND PROGRAMS

Overall Community Development

Goal 1: To achieve and maintain a complete **well-rounded community** of desirable neighborhoods, a strong employment base and a variety of community facilities. (Note: This goal is proposed as a substitute for GME, Goal 1, page 4) (15)

Residential

Policy 1: Preserve the character of **existing residential neighborhoods**.

Program 1.1: Enforce the provisions of the City's **zoning ordinance** (16) to maintain the character of existing residential neighborhoods.

Program 1.2: Use the City's **development review** procedures to minimize intrusions, such as traffic and noise, into existing neighborhoods.

Policy 2: Encourage **new housing** in infill and peripheral areas which are adjacent to existing residential development.

Program 2.1: Zone vacant **infill sites** at densities sufficiently high to encourage development while respecting the character of surrounding uses.

Policy 3: Preserve the character of the **downtown area** while enhancing its design and expanding retail, office and housing opportunities.

Program 3.1 Adopt a **specific plan** of the downtown area including recommendations for improving streetscape and building design, parking, circulation, residential and commercial opportunities.

Industrial, Commercial and Office

Policy 4: Ensure that neighborhood, community and regional **commercial centers** continue to provide goods and services needed by residents and businesses of Pleasanton and its market area.

Program 4.1: Zone sufficient land for neighborhood, community and regional **commercial uses** to support Pleasanton's increasing share of business activity.

Program 4.2: Distribute **marketing information** to developers and realtors which identifies the City's service needs and potential sites suitable for those services.

Policy 5: Encourage **industrial, commercial and office development** which is compatible with environmental constraints in Pleasanton. (Growth Management Element, Policy 1 and 3, p. 5)

Program 5.1: Continue to **monitor the effects** of commercial and industrial development on an ongoing basis to measure compliance with City standards and conditions of development approval.

Program 5.2: Establish a citywide **employment network** to encourage new and existing businesses to recruit Pleasanton residents for local employment opportunities.

Program 5.3: Encourage business parks and large employers to provide on-site **child care facilities**.

Program 5.4: Promote the location of **business services** in Pleasanton to support industrial, commercial and office complexes.

Community Facilities

Policy 6: Provide a diversity of **community facilities** to maintain and improve service levels for existing and future residents.

Program 6.1: Review and condition future developments to pay their fair share of future **community facilities** and sites.

Program 6.2: Cooperate with the **school district** to enhance the quality of education, anticipate and construct school facilities as they are needed, and maximize joint use of school buildings, city parks and playgrounds.

Program 6.3: Conduct a needs assessment, investigate **suitable sites** and develop financing to construct a new library, city hall, gymnasium, community centers, senior center and other community facilities to serve the needs of the community at buildout of the General Plan.

Policy 7: Provide each major residential area with high quality **neighborhood facilities** including an elementary school, park and other amenities.

Program 7.1: Develop **specific plans** for developing neighborhoods, such as the Stoneridge Drive corridor, to identify neighborhood facility needs.

Open Space

Policy 8: Preserve **open space areas** for the protection of public health and safety, the provision of recreational opportunities, the production of natural resources and the physical separation of Pleasanton from neighboring communities.

Program 8.1: Explore methods of preserving open space including fee purchase, conservation and scenic **easements**, transfer of development rights, Williamson Act contracts, open space zoning categories, etc.

Program 8.2: Cooperate with **neighboring jurisdictions** to maintain distinct boundaries between Pleasanton and adjacent communities.

Policy 9: Preserve **views** of Pleasanton and Main Ridges.

Program 9.1: Prohibit development of structures within **200 feet** in elevation of the crest of Pleasanton Ridge by locating proposed homes on less visible portions of existing lots.

Program 9.2: Restrict development within Public Health & Safety areas above **670 feet** in elevation or greater than 25% in slope on Pleasanton and Main Ridges to single family homes on existing lots of record which blend in with the local topography and vegetation.

Growth Management

Goal 2: To develop in an efficient, logical and **orderly fashion**. (GME, Goal 2, p. 4)

Policy 10: Regulate the number of housing units approved each year to adequately plan for infrastructure and assure City residents of a **predictable growth rate**. (GME, Goal 4, p. 12; Policy 18, p. 12; RRC, p. 19)

Program 10.1: Use the City's **Growth Management Program** to limit residential allocations to between 260 and 650 housing units per year. The annual allocation should be based on a periodic assessment of housing need, employment growth, the availability of infrastructure and the City's ability to provide public services. Exemptions and unused allocations from prior years may be added to the maximum up to a total of 1,000 units in any year.

Program 10.2: Prepare a **"Growth Management" report** on which the City Council can base their annual Growth Management allocations.

Program 10.3: Set aside approximately 715,000 gallons of **sewer capacity** to service projected residential growth from 1987-1991.

Policy 11: Plan for a **holding capacity** of 74,000 people within the existing Planning Area and a maximum of 11,000 people within the Expanded Planning Area at buildout of the General Plan.

Program 11.1: Monitor and zone future residential project densities according to the projected **holding capacity** of the Planning Area.

Policy 12: Plan for future development and conservation of the **"Expanded Planning Area"**.

Program 12.1: Designate the Expanded Planning Area as a **study zone** for consideration of all land uses and densities until specific studies determine the appropriate uses for the area.

Program 12.2: Conduct **specific studies** in cooperation with affected agencies, of access, utilities, services, environmental constraints and holding capacity in the western expansion area as a first priority within the Expanded Planning Area.

Program 12.3: Pursue an aggressive expansion of the City's **sphere of influence** into the western expansion area.

Program 12.4: Encourage the **City of Hayward** to withdraw its annexation of those areas within Pleasanton's existing and expanded Planning Area.

Policy 13: Annex urbanized pockets of **unincorporated land** adjacent to the City limits in those areas where landowners are willing to accept City services and development standards. (GME Policy 15 and 16, p. 11)

Program 13.1: Explore methods of **annexing** the remaining unincorporated pockets of urbanized land including Happy Valley, Castlewood, the Remen Tract and other areas.

Policy 14: Encourage development in locations which would complete or install planned **public facility systems**. (GME, Policy 25, p. 17)

Program 14.1: Postpone development until 1996 or later on four parcels designated as **"urban reserve."** These four parcels are the 152 acre parcel owned by TMI and three parcels, totaling 550 acres, owned by the City and County of San Francisco, all of which lie within the I-680 scenic corridor, north of Sunol Boulevard.

Program 14.2: Discourage the extension of public facilities into areas not within Pleasanton's **sphere of influence** or areas inconsistent with LAFCO policies.

Citizen Participation

Goal 3: To encourage the **participation** of residents, businesses and neighboring jurisdictions in planning for community development.

Policy 15: Encourage the **participation** of Pleasanton residents and businesses in land use planning and decision-making. (HE, Goal 6, 44)

Program 15.1: Involve **citizen committees** in the formulation of City plans and programs, such as the specific plan for the downtown area.

Program 15.2: **Disseminate information** regarding City policies and services to Pleasanton residents and business through the use of information brochures, public meetings and cooperation with the media.

Policy 16: Promote **cooperative planning** among the City, Alameda County and other agencies. (GME Policy 11, p.8; SSE, Subgoal 2, p. 7)

Program 16.1: Provide notice and review of **projects of area wide significance** in cooperation with affected jurisdictions.

Program 16.2: Work with **Tri-Valley jurisdictions** to help solve mutual concerns such as traffic.

Policy 17: **Review and update** the Pleasanton General Plan as conditions change. (SSE, Subgoal 8, p. 8)

Program 17.1: Conduct a **review of General Plan** elements, policies and land uses by public officials and citizens every five years, particularly the Housing Element.

DEFINITIONS: **Land Use** means a specific use (e.g., housing, retail commercial, or agriculture) of land, water or air space.

Existing Land Uses are those currently built.

Planned Land Uses are those allowed by the General Plan (see map) and Zoning Ordinance.

A **Zoning Ordinance** divides a city into districts within which only certain uses (e.g., single family homes or offices) are allowed under certain conditions (e.g., height limits, parking requirements).

The **Holding Capacity** of the General Plan is the maximum number of housing units (or population) and square footage (or employees) that could be accommodated if all land uses shown on the General Plan Map were built at average densities.

Open Space means any land or water which is used for the preservation of natural resources, the promotion of outdoor recreation, the production of agriculture or the protection of the public health and safety.

Neighborhood Park means a park which primarily serves the neighborhood area. Provides children play areas, open field area for casual play and may provide casual use picnic areas.

Community Park means a park that serves the entire community. May provide parking areas, rest rooms and facilities for community activities, and may be scheduled for group use. The park may have a specific focus such as sports fields, tennis courts, or swimming pool.

Regional Park means a large area of land and/or water which provides amenities to serve a regional area.

Slope means the ratio of the rise over the run on a segment of land, where a vertical line would have an infinite slope. For example, a vertical rise of 1 foot over a horizontal run of 1 foot, equal to a 45 degree angle, has a slope of 100%.

Specific Plan means a set of land use, density, transportation, public facility and open space standards which clarify the application of General Plan policies to a particular area, e.g., Downtown.

Community Facilities refer to schools, recreation facilities, parks, City Hall and other civic buildings, utility plants, churches, cemeteries, hospitals and other similar facilities.

The **Downtown Area** refers to the older residential and commercial area bounded by First Street, Stanley Boulevard, the Arroyo del Valle, Fair Street, Rose Avenue, Pleasanton Avenue and Bernal Avenue (Figure I-3).

The **Central Business District** refers to the Downtown commercial area which is bounded by First Street, Stanley Boulevard, the Arroyo del Valle, Peters Avenue and Bernal Avenue.

Footnotes

- (1) Center for the Continuing Study of the California Economy, Top 25 California Cities Since 1980, 1984
- (2) Pleasanton Environmental Monitoring Committee, Environmental Monitoring Committee Year End Report, October 1985
- (3) City of Pleasanton, Information Report - Citywide Results of the 1985 Transportation Survey, December 3, 1985
- (4) Alameda County, Specific Plan for the Livermore-Amador Valley Quarry Area Reclamation, November 1981
- (5) City of Pleasanton, Municipal Code, Title 17, Chapter 17.36, Growth Management Program, as amended
- (6) City of Pleasanton, Department of Planning and Community Development, Growth Management Report, October 1985
- (7) Association of Bay Area Governments, Projections 85 - Forecasts for the San Francisco Bay Area to the Year 2005, July 1985
- (8) Gruen Gruen + Associates, Projections of Employment and Household Growth in the Tri-Valley Subregion, July 1985
- (9) City of Pleasanton, Transportation Systems Management Ordinance No. 1154, October 1984
- (10) State of California, Government Code, Section 65913.1
- (11) State of California, Government Code, Section 65583 et. seq.
- (12) Gruen Gruen + Associates, Projections of Employment and Household Growth in the Tri-Valley Subregion, July 1985
- (13) Gruen Gruen + Associates, Land Use Policy and Holding Capacities in the Tri-Valley, June 1986
- (14) Association of Bay Area Governments, Jobs/Housing Balance for Traffic Mitigation - Interstate 680 and Interstate 580 Corridor Study, November 1985
- (15) Note: Throughout the Goals, Policies and Programs section of each element, the following abbreviations refer to the existing General Plan element, policy and page number from which the proposed Goal, Policy or Program is derived: LUE=Land Use Element; CE=Circulation Element; HE=Housing Element; COSE=Conservation and Open Space Element; SSE=Seismic Safety Element; NE=Noise Element; SE=Safety Element; GME=Growth Management Element; EE=Environmental Element. Other abbreviations refer to the Environmental Monitoring Committee (EMC), the Industrial General Plan Review Committee (IGPRC), the Residential Review Committee (RRC), and the California Office of Planning and Research (OPR). In cases where a Goal, Policy or Program is not followed by a reference, the proposed language is staff's recommendation.
- (16) City of Pleasanton, Municipal Code, Title 18, Zoning Ordinance, as amended

TABLE II-1

RESIDENTIAL NEIGHBORHOODS

<u>Subarea</u>	<u>Neighborhood</u>	<u>Subarea</u>	<u>Neighborhood</u>
1	West of Foothill	24	Hacienda Gardens
2	Highland Oaks	25	Las Positas Garden Homes
3	Stoneridge	26	Gatewood
4	Oak Hill	27	Mohr-Martin
5	Foothill Farms	28	Mohr Park
6	Foothill Knolls	29	Pleasanton Village
7	Foothill Place	30	Rosewood
8	Laguna Vista	31	Heritage Valley
9	Deer Oaks/Twelve Oaks	32	Danbury Park
10	Longview	33	Amador Estates
11	Golden Eagle Farms	34	Jensen Tract
12	Castlewood	35	Vintage Hills
13	Val Vista	36	Remen Tract
14	Valley Trails	37	Vineyard Avenue
15	Country Fair	38	Pleasanton Heights
16	Del Prado	39	Old Towne
17	Parkside	40	Mission Hill
18	Amberwood/Wood Meadows	41	Mission Park
19	Willow West	42	Rosepointe
20	Birdland	43	Carriage Gardens
21	Pleasanton Valley	44	Happy Valley
22	Downtown	45	Southeast Pleasanton
23	Pleasanton Meadows		

Note: See Figure II-1 for neighborhood locations

TABLE II-2

MAJOR INDUSTRIAL/COMMERCIAL/OFFICE COMPLEXES (1)

<u>Project/Contact (2)</u>	<u>Gross Acreage</u>	<u>Uses</u>	<u>Gross Square Feet</u>		<u>Estimated Employees</u>
1 Farmers Insurance (PUD 81-2) 847-3100	+14 acres	Office	Occupied	153,000	
			Vacant	0	
			U/C (3)	0	
			Approved	0	
			Potential	0	
			Total	153,000	800
2 Stoneridge Mall Contact: Wayne Macktinger 786-1100	+74 acres	Commercial Retail	Occupied	1,090,528	
			Vacant	135,632	
			U/C	0	
			Approved	0	
			Potential	+190,000	
			Total	1,416,160	1,150
3 Stoneridge Drive Periphery Various Owners	+49 acres	Office Retail	Occupied	674,356	
			Vacant	226,031	
			U/C	0	
			Approved	0	
			Potential	80,000	
			Total	980,387	1,950
4 Stoneridge Business Center (PUD 81-22) Mozart Development Corp. Contact: John Lovewell 326-7803	+91 acres	Office Hotel Residential	Occupied	0	
			Vacant	0	
			U/C	265,500	
			Approved	237,484	
			Potential	619,516 plus 347 residential units and 200 room hotel	
			Total	1,122,500	3,365
5 Commerce Circle/Clorox/ Dillingham Various Owners	+65 acres	R&D Warehouse Lt. Ind.	Occupied	627,497	
			Vacant	92,685	
			U/C	96,000	
			Approved	0	
			Potential	145,460	
			Total	961,642	1,923
6 Pleasanton Park (PUD 80-14) (PUD 82-1) (PUD 86-4) Reynolds and Brown Contact: Tom Terrill 463-1250	+56 acres	Gen. Office RD/Lt. Ind. Commercial Warehouse	Occupied	275,759	
			Vacant	102,025	
			U/C	0	
			Approved	121,037	
			Potential	279,622	
			Total	778,443	2,335
7 Meyer Center and Center Park (PUD 80-16) Contact: L. Carter Crewe, III 484-1080	+82 acres	Gen. Office Commercial Industrial	Occupied	8,427	
			Vacant	342,244	
			U/C	0	
			Approved	0	
			Potential	899,499	
			Total	1,250,170	3,285

<u>Project/Contact (2)</u>	<u>Gross Acreage</u>	<u>Uses</u>	<u>Gross Square Feet</u>	<u>Estimated Employees</u>
8 Hacienda Business Park (PUD 81-30) Contact: Joyce Owen Callahan-Pentz Properties 463-2300 Prudential Insurance Company (PUD 85-8) Contact: Bernice Bridge 463-9100	Phase I <u>+573</u> Phase II <u>+260</u>	Garden Off. Gen. Office Commercial Midrise Of. RD/Lt.Ind. Warehouse Garden Off. Gen. Office Commercial Midrise Of. RD/Lt. Inc. Warehouse	Occupied 1,291,236 Vacant 753,414 U/C 790,414 Approved 486,380 Potential 4,003,556 <u>Total 7,325,000</u> Occupied 0 Vacant 0 U/C 0 Approved 998,207 Potential 3,432,111 <u>Total 4,430,318</u>	23,456 16,151
9 Trammell Crow (PUD 85-2) Contact: Peter Schnugg 854-5333 or 449-2000	<u>+49 acres</u>	Commercial Auto Dealer Office	Occupied 0 Vacant 0 U/C 14,200 Approved 35,300 Potential 672,803 <u>Total 722,303</u>	1,416
10 Santa Rita Ind. Park (PUD-82-18)	<u>+15 acres</u>	Lt. Ind.	Occupied 79,426 Vacant 124,617 U/C 0 Approved 0 Potential 0 <u>Total 204,043</u>	431
11 Valley Business Park (PUD 80-1) Contact: Joyce Owen Callahan-Pentz Properties 463-9205	<u>+69 acres</u>	Lt. Ind. Commercial Gen. Office	Occupied 278,432 Vacant 289,308 U/C 128,666 Approved 49,560 Potential 99,866 <u>Total 845,832</u>	1,827
12 Stanley Business Park (PUD 83-25) Contact: Frank Auf der Maur 846-4421	<u>+38 acres</u>	Lt. Ind. Commercial Warehouse	Occupied 215,808 Vacant 24,104 U/C 12,000 Approved 0 Potential 854,814 <u>Total 1,106,726</u>	2,211
13 Pleasanton Station (PUD 81-28) Contact: Keith Ferris 462-2979	<u>+3.1 acres</u>	Gen. Office Commercial	Occupied 999 Vacant 43,329 U/C 25,672 Approved 0 Potential 0 <u>Total 70,000</u>	204
14 Koll Business Park (PUD 80-2) Contact: Jim Gresham 460-0300	<u>+102 acres</u>	Office Commercial Hotel RD/Lt.Ind.	Occupied 0 Vacant 0 U/C 0 Approved 0 Potential 1,160,000 <u>Total 1,160,000</u>	2,017

(1) Source: City of Pleasanton; Bissell and Karn. All occupancy data as of November 1985. Other data as of March 1986. Does not include downtown or smaller commercial centers.

(2) See Figure II-2 for project locations.

(3) Under Construction.

TABLE II-3

EMPLOYMENT DENSITY STANDARDS (1)

<u>Workplace Type</u>	<u>Average Square Feet Per Employee</u>
Office	260
Research & Development	360
Light Manufacturing	590
Warehouse/Service Industrial	590
Service Commercial	490
Retail	510
Restaurant	170
Hotel/Motel	1,060

(1) Gruen Gruen + Associates, Employment Densities by Type of Workplace, July 1985

TABLE II-4
GENERAL PLAN DENSITIES

<u>Land Use Designation</u>	<u>Allowable Density</u>	<u>Density Used for Calculating Holding Capacity (1)</u>
Rural Density Residential	0 - .2 d.u./acre	.2 d.u./acre
Low Density Residential	0 - 2 d.u./acre	1.0 d.u./acre
Medium Density Residential	2 - 9 d.u./acre	5.0 d.u./acre
High Density Residential	9+ d.u./acre	15.0 d.u./acre
Commercial/Office	0 - 60% F.A.R.	35% F.A.R.
General and Limited Industrial	0 - 70% F.A.R.	31% F.A.R.
Business Park	0 - 70% F.A.R.	32% F.A.R.
Sand and Gravel Harvesting	0	0

TABLE II-5

COMMUNITY FACILITIES

<u>Map #</u>	<u>Name and Address of Facility</u>
1	Adult Education/Amador HS - 1155 Santa Rita Road
2	Alameda County Health Dept. - 3720 Hopyard Road
* 3	Amador Recreation Center - 4455 Black Avenue
* 4	Century House - 2041 Santa Rita Road
5	City Corporation Yard - Busch Road
* 6	Community Clubhouse/Amador Park - 4455 Black Avenue
7	County Fairgrounds - 4501 Pleasanton Avenue
* 8	Cultural Arts Center - 4477 Black Avenue
9	Department of Motor Vehicles - 6300 W. Las Positas
10	Dublin/San Ramon Sewage Plant - 7399 Johnson Drive
11	Fire Station 1 - 444 Railroad Avenue
12	Fire Station 2 - 6300 Stoneridge Mall Road
13	Fire Station 3 - 3200 Santa Rita Road
14	Historical Society Museum - 603 Main Street
15	Library - 4333 Black Avenue (to be relocated)
16	Liv.-Am. Wastewater Management Agency - 7176 Johnson
17	Memorial Gardens/St. Augustine Cemetary - Sunol Blvd.
18	Pleasanton Aquatic Center/Amador Park - 4455 Black
19	Pleasanton City Hall - Civic Center - 200 Old Bernal
20	Police Department - 4833 Bernal Avenue
21	Post Office - 4300 Black Avenue
22	Pre-School "Gingerbread House" - 4040 Vineyard Avenue
23	School District Office - 123 Main Street
* 24	Senior Service Center - Veterans Building - 301 Main
25	Sewage Treatment Ponds - Near Stoneridge and Johnson
26	Tennis Courts - County Fairgrounds (4 courts)
27	Amador High School Tennis Courts (9 courts)
* 28	Amador Theater - 1155 Santa Rita Road
28	Pleasanton School Tennis Courts (2 lighted courts)
29	Val Vista Recreation Bldg./Val Vista Park - Payne Road
30	Valley Memorial Hospital Site -W. Las Positas/Santa Rita

* Facilities available for rental - contact Department of Parks and Community Services, 200 Old Bernal Avenue, Avenue, Pleasanton, CA (847-8160)

Note: See Figure II-3 for community facility locations

TABLE II-6
SCHOOLS, CAPACITIES AND ENROLLMENTS

<u>Map #</u>	<u>Name</u>	<u>Type</u>	<u>Capacity</u>	<u>1985-1986 Enrollment</u>
Amador/Pleasanton School Districts				
1	Alisal	K-6	550	525
2	Amador	9-12	1980	1875
3	Dublin	9-12	1800	900
4	Fairlands	K-6	682	708
5	Foothill	9-12	1475	1450
6	Harvest Park	7-8	1090	1089
7	Pleasanton	6-8	(1)	(1)
8	Valley HS (continuation)	11-12	140	140
9	Valley View	K-6	651	627
10	Village HS (continuation)	9-10	75	80
11	Vintage Hills (2)	K-4	248	222
12	Walnut Grove	K-6	1054	1039
Murray School District				
13	Donlon	K-6	1232	625
14	Lydiksen	K-6	844	414
15	Wells	7-8	850	746

Future School Sites:

<u>Map #</u>	<u>School Type</u>	<u>Location</u>	<u>Acreage</u>
16	Elementary School	Stoneridge Drive Area	5.0
17	Elementary School	Hansen & Black Avenue	7.2
18	Elementary School	San Francisco Water Department Lands	5.0
19	Middle School	Undetermined	20.0

(1) Currently closed, will reopen as an administrative facility

Note: See Figure II-4 for school facility and site locations

Source: Pleasanton Joint School District, Projected City Growth and its Impact on the School District, January 1986

TABLE II-7

NEIGHBORHOOD, COMMUNITY AND REGIONAL PARKS

<u>Map #</u>	<u>Park Name</u>	<u>Type</u>	<u>Acreage</u>	<u>Functions</u>
1	Moller	N	7.90	PE, P, BP, Be, L, T
2	Muirwood	C	14.50	Te, PE, P, B, T, So
3	Val Vista	N	10.70	T, PE, P
4	Fairlands	N	13.80	Te, PE, T, L, BP, S, So
5	Staples (GL)	C	25.00	Undeveloped
6	Oakland (TN)	N	5.00	Undeveloped
7	Bicentennial	N	2.69	L, T
8	Orloff	N	8.12	T, L, BB, Be, BP, P, PC, PE
9	Woodthrush	N	3.50	T, L, BP
10	Pl. Sports & Recreation	C	105.00	S, Ba, So, SB, R, P, B, PE
11	Valley Trails	N	6.10	L, BB, ORS, BP
12	Heatherlark	N	.76	Be, PE
13	Pleasanton Community and Tennis Park	C	15.00	Undeveloped
14	Oakhill	N	3.88	PE, BP, T, L
15	Ponderosa (TN)	N	5.00	Undeveloped
16	Alviso Adobe	N	3.00	Undeveloped
17	Hansen	N	6.15	T, PE, So, S
18	Harvest	N	1.60	PE, L
19	Walnut Grove	N	3.50	T, P, B
20	Amador Valley	C	23.50	T, L, Sw, R, P, PE, S, PE, BP, PC, B
21	Shadow Cliffs	R	249.00	BP, Sw, F, P, B, WS, PB, H, T, WSS, Private Boating
22	Tawny	N	3.76	Be, T, L, BP, PE
23	Vintage Hills	N	4.00	T, BP, P, PE
24	Kottinger	C	14.50	P, BP
25	Kottinger Village	N	4.90	PE, BB, L, P, PC
26	McKinley	N	5.30	Undeveloped
27	Veterans Plaza	N	.5+	Undeveloped
28	Wayside	C	.70	L, BD, P
29	Delucchi	N	.70	T, B, P, Be
30	San Francisco Water Department (GL)	C	35.00	Undeveloped
31	Mission Hills	N	8.50	T, BB, P, PE
32	Augustine Bernal	C	230.00	Undeveloped
33	Ridge Trail (GL)	C	+100.00	Undeveloped
34	Arroyo de la Laguna (GL)	C	+200.00	Undeveloped
35	Suttergate	N	2.70	Undeveloped
36	Main Street Green	C	.10	T

B=Barbeque; Ba=Baseball; BB=Basketball; BD=Bandstand; Be=Benches
 BP=Bike/Ped Path; F=Fishing; H=Hiking; L=Landscaping; ORS=Outdoor
 Roller Skating; P=Picnic; PB=Paddle Boats; PC=Par Course; PE=Play
 Equipment; R=Restrooms; S=Soccer; SB=Snack Bar; So=Softball;
 Sw=Swimming; T=Turf; Te=Tennis; WS=Water Slide; WSS=Wind Surfing
 School; TN=Temporary Name; GL=General Location; N=Neighborhood
 Park; C=Community Park including special use areas

Note: See Figure II-5 for park locations

TABLE II-8

GENERAL PLAN ACREAGE

<u>General Plan Category</u>	<u>General Plan Acreage</u>
RESIDENTIAL	8,063
Rural Density	1,119
Low Density	2,674
Medium Density	3,675
High Density	595
INDUSTRIAL/COMMERCIAL/OFFICE	5,666
Commercial and Office	833
General and Limited Industrial	497
Industrial/Commercial/Office	1,217
Sand and Gravel Harvesting	3,119
COMMUNITY FACILITIES	849
Public and Institutional	626
Schools	223
OPEN SPACE	11,752
Parks and Recreation	1,523
Agriculture and Grazing	1,659
Public Health and Safety	8,570
SUBTOTAL	26,330
Arroyos, Major Streets and Railroads	1,670
TOTAL PLANNING AREA	28,000

Note: General Plan acreage includes amendments up to
January 1, 1986

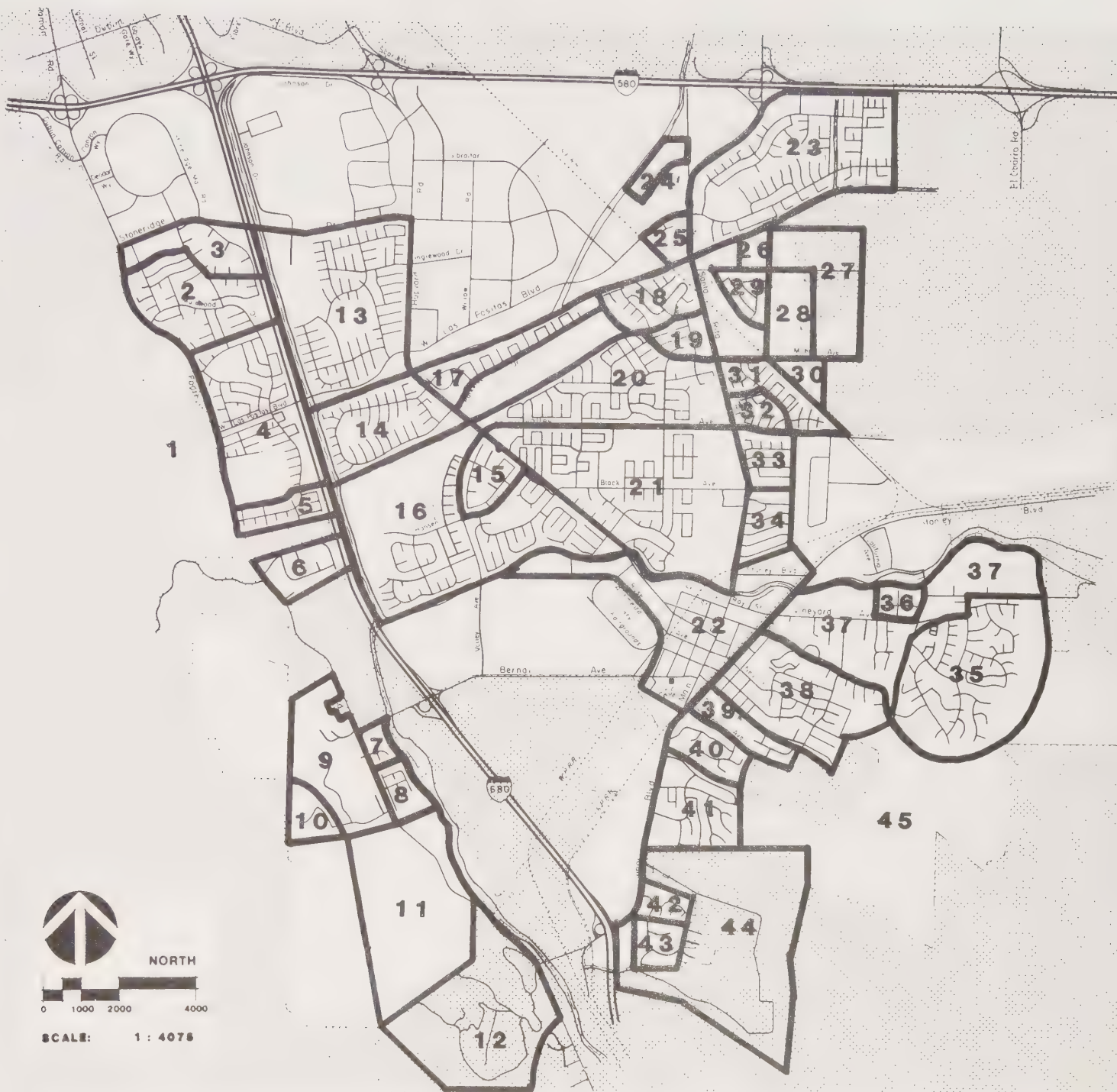


Figure II-1

RESIDENTIAL NEIGHBORHOODS



NOTE: see Table II-1

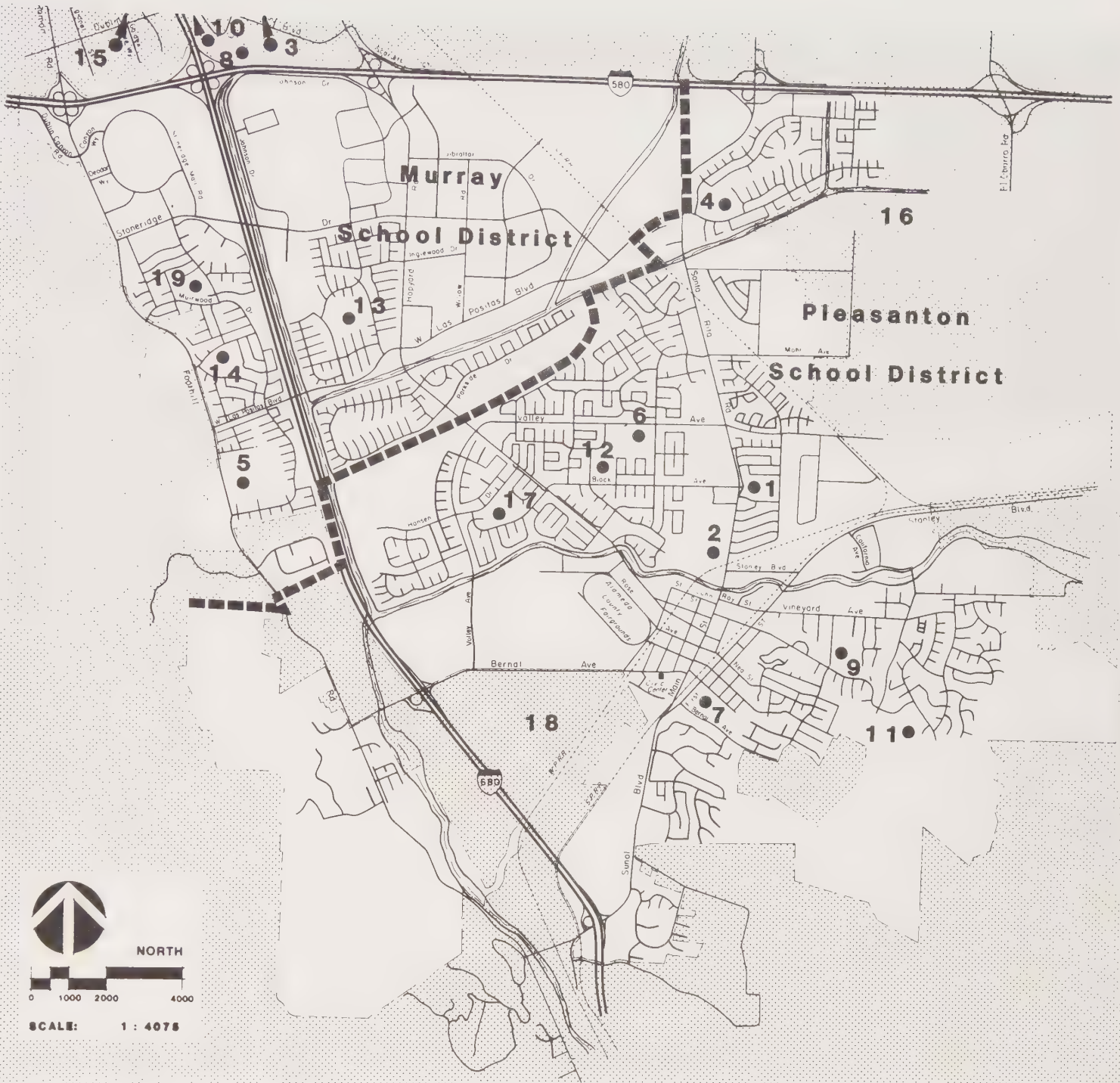


Figure II-4

SCHOOL FACILITIES AND SITES



----- School District Boundary

NOTE: see Table II-6



Figure II-5

NEIGHBORHOOD, COMMUNITY AND REGIONAL PARKS



NOTE: see Table II-7

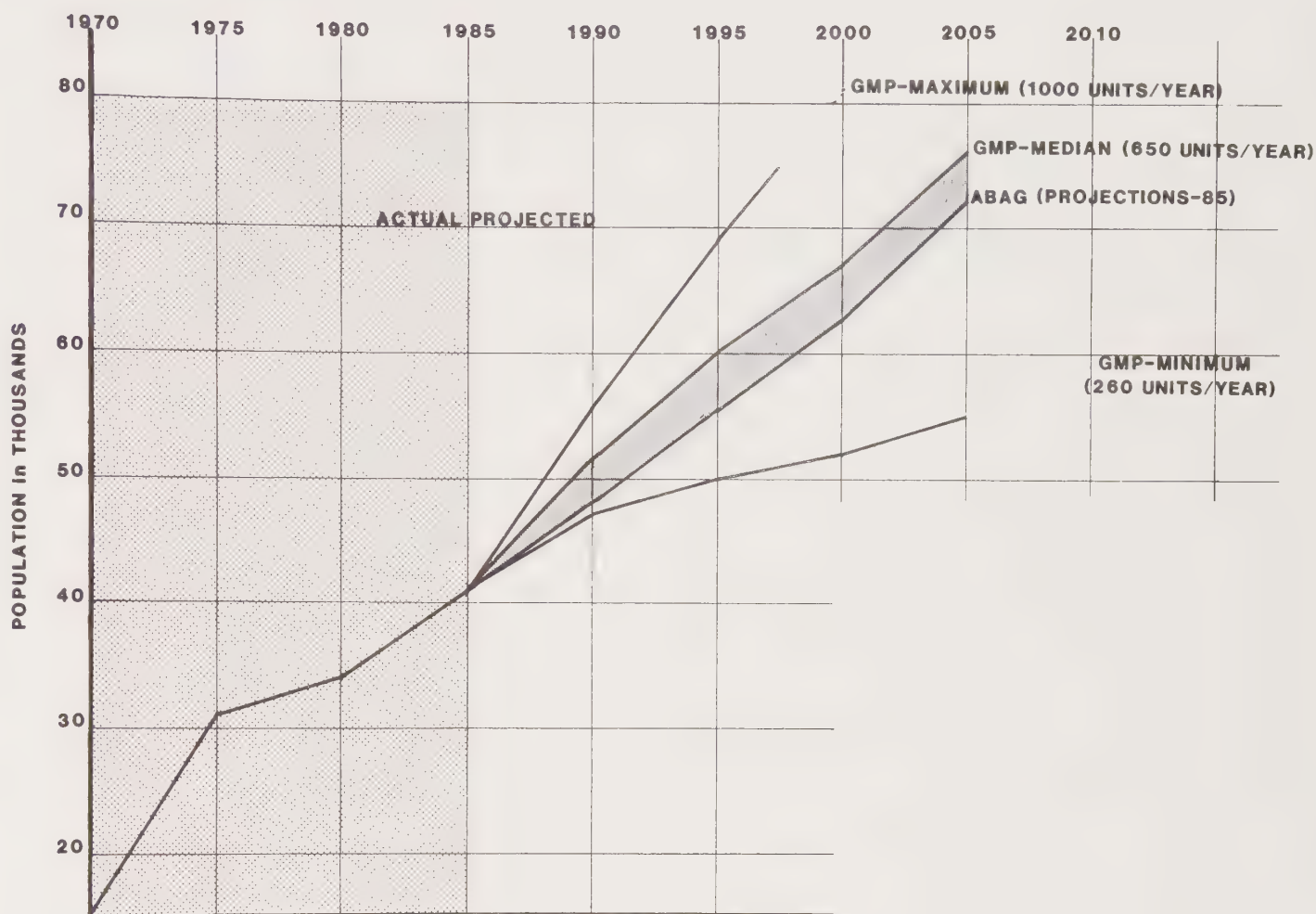


Figure II-6

POPULATION PROJECTIONS

YEAR	GMP-MEDIAN	ABAG
1985	40,740	40,740
1990	51,689	47,800
1995	60,065	55,500
2000	67,662	62,800
2005	74,000	72,700

SOURCE: ABAG; CITY OF PLEASANTON



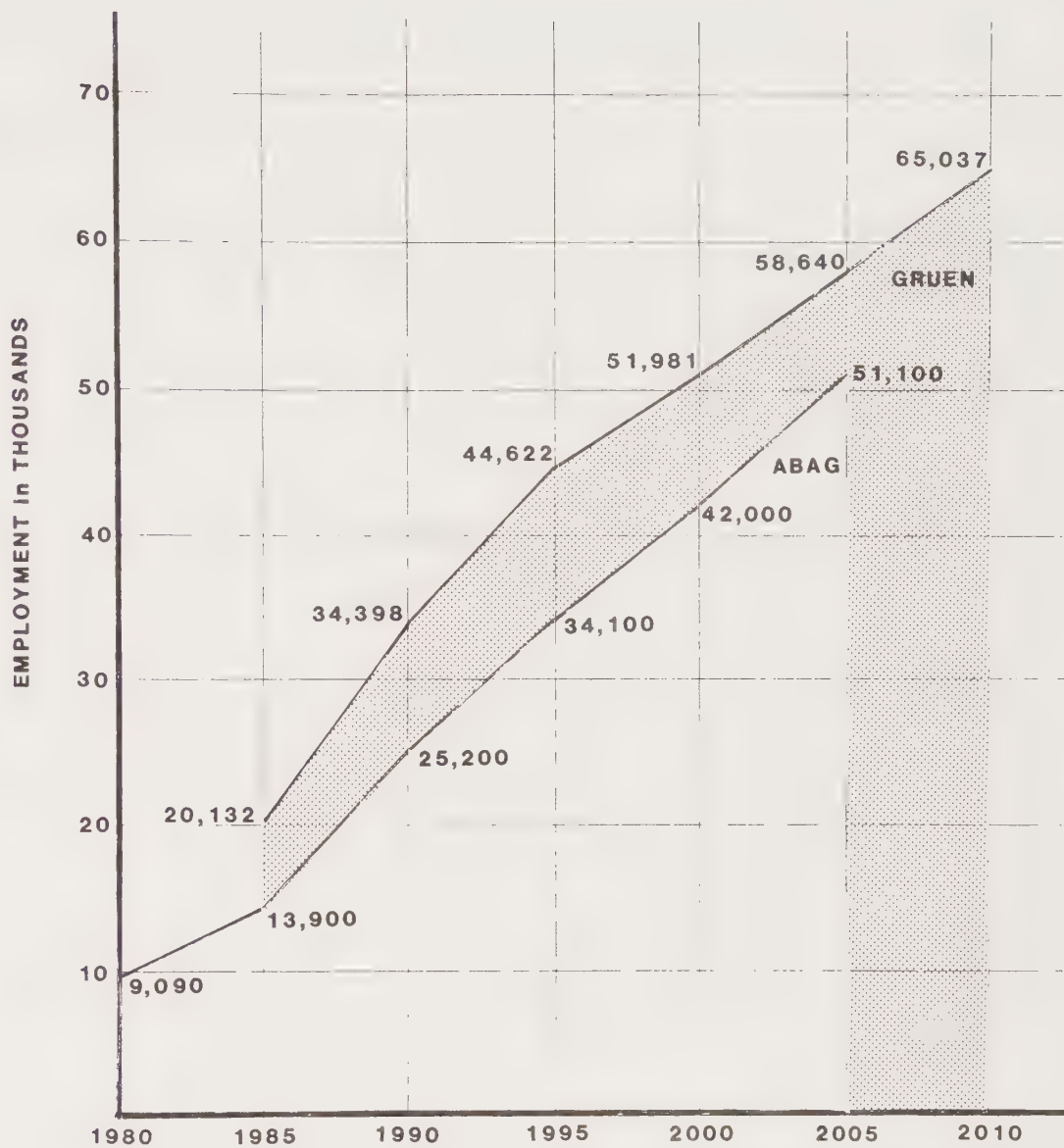


Figure II-7

EMPLOYMENT PROJECTIONS



SOURCE: ABAG, PROJECTIONS-85, JULY 1985

GRUEN GRUEN & ASSOCIATES, PROJECTIONS OF EMPLOYMENT
& HOUSEHOLD GROWTH IN THE TRI-VALLEY, JULY 1985

III. CIRCULATION ELEMENT

PURPOSE OF THE CIRCULATION ELEMENT

The Circulation Element contains policies and a map indicating the general location and extent of existing and proposed circulation routes and facilities; provides a transportation system adequate to serve the traffic projected to be generated by the land uses shown on the General Plan Map as well as regional through traffic; promotes the efficient transport of people and goods; and encourages the efficient use of existing transportation facilities.

STREETS AND HIGHWAYS

Pleasanton is served by an extensive roadway network which includes freeways, arterials, collectors and local streets. **Freeways** are characterized by their limited access and grade separations and primarily serve long distance trips. **Arterials** feed through traffic to freeways, provide access to adjacent land uses primarily at intersections, and feature traffic control measures. **Collectors** provide access to adjacent land uses and feed local traffic to arterials. **Local streets** are designed to serve only adjacent land uses and are intended to protect residents from through traffic. Typical capacities for these types of roadways are shown in Table III-1.

Description of the Existing Roadway Network

Pleasanton is served by two freeways and one State Highway. Interstate 580 is an eight lane freeway which runs east-west from Interstate 5 near Tracy to Interstate 80 in Emeryville. Interstate 680 is a four lane freeway, south of I-580, and a six lane freeway, north of I-580, which runs north-south from Interstate 280 in San Jose to Interstate 80 near Fairfield. Highway 84 is a two lane State highway which runs from I-580 in Livermore to Highway 1 near San Gregorio.

Arterials serving the Pleasanton Planning Area include Foothill Road, Hopyard Road, Hacienda Drive, Santa Rita Road, Owens Drive, Stoneridge Drive, West Las Positas Boulevard, Valley Avenue, Stanley Boulevard, Bernal Avenue, First Street and Sunol Boulevard. Pleasanton also is served by numerous collectors and local streets. Pleasanton's existing roadway network is illustrated in Figure III-1.

Existing Roadway Standards

The City of Pleasanton has adopted numerous **roadway standards** and requirements to protect the safety and welfare of its citizens. Public streets within the City limits are constructed and

maintained to City standards (1). Most City streets feature at least 12 foot wide lanes, curbs, gutters and sidewalks. Stop signs, traffic signals, pedestrian crosswalks and bicycle lanes are installed where traffic conditions warrant and sufficient rights-of-way exist. Exceptions include older streets which were built prior to modern road standards, areas in which insufficient rights-of-way are available for roadway improvements, or streets for which insufficient funds exist for improvements.

Pleasanton also has adopted standards for controlling traffic congestion at critical intersections outside of Downtown. These **Level of Service standards** require developers of major business parks to limit traffic volumes to a maximum of LOS D (Table III-2) at these critical intersections or develop mitigations which will return traffic volumes to this standard. Mitigations could include roadway improvements, such as street widening, traffic trip reductions, such as ridesharing, or limiting the density or type of adjacent land uses.

The City also regulates traffic speeds and movements, and establishes parking requirements. Traffic speeds are established according to roadway type, capacity, condition and accident rates. Moving violations are established in the City's Vehicle and Traffic Code and are enforced by the Pleasanton Police Department. **Parking requirements** are established in the City's Zoning Ordinance (2) and enforced by the Planning Department when plans are checked for new buildings or additions. Residential uses generally require two off-site parking spaces per unit. Industrial, commercial and office uses range from one space per 150 to 500 square feet, depending on the particular use. Parking requirements are reduced in the downtown area to encourage higher density uses. The zoning ordinance also establishes standards for parking dimensions.

Existing Traffic Conditions

Existing and future traffic volumes are measured in terms of Average Daily Traffic (ADT) and peak hour volumes. **Average Daily Traffic** is defined as the total number of cars passing over a segment of roadway, in both directions, on an average day. **Peak hour traffic** is defined as the total number of cars passing over a roadway segment during the busiest hour of the morning or afternoon. In Pleasanton, the peak hours generally are 7:30-8:30 A.M. and 4:30-5:30 P.M. and typically constitute 8-12% of ADT.

The relative congestion of roadways is measured by the peak hour traffic volume divided by the capacity of the roadway segment or intersection. The resulting ratio is called a V/C ratio. **Levels of Service (LOS)** are determined from the V/C ratios. Table III-2 defines the range of Levels of Service and describes the resulting effects on traffic congestion.

As can be seen from Table III-3 and Figure III-2, the busiest **roadway segment** in Pleasanton at the present time is along

Hopyard Road between Owens Drive and the I-580 eastbound off ramp (3). This segment of roadway currently carries about 39,000 vehicles per day, 8% of which occurs during the morning peak hour and 9.2% of which occurs during the afternoon peak hour. The resultant service level on this segment is LOS D during the morning peak and LOS F during the afternoon peak. Other major arterials carrying large traffic volumes are segments of Santa Rita Road, Foothill Road, Bernal Avenue, Valley Avenue, Stanley Boulevard, Stoneridge Drive, Sunol Boulevard, and Main Street (Figure III-3). I-580 and I-680 currently carry large traffic volumes (Table III-5) and segments of both are planned for improvements to increase capacity.

The flow of traffic on a given roadway segment is almost always defined by the volume and capacity of the nearest **intersection**. In the case of Hopyard Road, the major cause of congestion along the roadway is the bottleneck which is created at the intersection of Hopyard and I-580. Because of the narrow dimensions of the overpass interchange, demand exceeds capacity, causing segments of Hopyard Road further to the south and Dougherty Road to the north to be jammed. Service levels at Hopyard Road and I-580 are LOS D during the morning peak hour and LOS F during the afternoon peak hour.

All other intersections within Pleasanton currently are at or below the City's adopted standard of LOS D. As indicated in Table III-4 and Figure III-4, other intersections which are approaching the City standard include Santa Rita at Valley, Main at Bernal, First at Vineyard, First at Neal, Stanley at California, and Foothill at Canyon.

Future Conditions

Traffic Projection Model

In order to forecast future traffic volumes and Levels of Service, the City of Pleasanton uses a traffic projection model based on buildout of all the land uses shown on the General Plan Map. The particular system the City's traffic consultants use is called a **gravity model** and is approved by the California Department of Transportation (Caltrans).

The model is based on the roadway network shown on the General Plan Map which consists of the existing street and highway network (Figure III-1) in addition to several new roadway segments, such as the Stoneridge Drive Extension, new interchanges, such as the Hacienda Drive/I-580 interchange, and improvements to existing roadways and intersections, such as street widenings, additional turn lanes, traffic signals and overpasses. Projected traffic volumes are calculated using the total amount of housing units and building square footage contained in the Land Use Element at buildout of the General Plan. This information is divided into 52 traffic zones within the Pleasanton Planning Area and translated into traffic volumes

using various trip generation rates for different types of land use.

Traffic volumes are fed onto local streets, arterials and highways using a complex formula which determines which route traffic will take to reach a given destination. The chosen route for a particular trip is determined by a combination of factors including travel time and distance, the speed and capacity of various roads and the levels of congestion encountered en route. A particular trip may be diverted to a longer route, for example, to avoid a severely congested intersection. The model is run through several times in order to best estimate people's choice of routes given these types of factors.

The model then calculates the Average Daily Traffic and peak hour volumes along roadways and estimates Levels of Service at intersections based on the future capacity of individual roadway segments and intersections. A similar calculation is performed for all the cities in the Tri-Valley and added to projections of through traffic generated from all points in the Bay Area to determine traffic volumes and levels of service on freeways and arterials carrying large amounts of through traffic. The gravity model is described in detail in a separate document (4).

Future Traffic Model Runs

The traffic projection model first was run to determine traffic volumes and Levels of Service on the former roadway network generated by buildout of the former General Plan, as amended. Several key intersections were identified which exceeded the City's standard of **LOS D**, including intersections along Hopyard Road, Santa Rita Road, and Stoneridge Drive. Roadway improvements were developed to reduce these problem intersections to acceptable levels and a new roadway network was established. Traffic generated by the General Plan then was analyzed using this new roadway network resulting in several additional intersections which exceeded the City's standard. These intersections are shown in Table III-6.

The **improvements** required to be added to the existing roadway network are illustrated on Figure III-5. Assuming these improvements are made prior to the generation of future traffic trips, all intersections within the Planning Area will be maintained within the City's standard of **LOS D** except for five intersections in the Downtown. The traffic volumes and Levels of Service resulting from buildout of all the land uses and improvement of all the roadway segments and intersections shown on the General Plan Map (Figure III-8) are discussed below.

Future Traffic Conditions

Buildout of all the land shown on the General Plan Map is a worst case scenario for the future which may never occur. Most communities project future traffic volumes 10 or 20 years into

the future or assume only a portion of their planning area will develop. In order to adequately plan for future development, the Pleasanton Plan roadway network is designed to accommodate buildout of all land within the Planning Area. Roadways are sized, intersections are designed and alternative transit systems are proposed which will enable full development to occur within City Level of Service standards, except in the downtown area.

In the future, traffic volumes will increase substantially over existing conditions. Table III-3 and Figure III-3 compare **average daily traffic** volumes in 1985 with those projected at buildout of the General Plan. As could be expected from the large amount of business park development, much of the projected increases in traffic will occur on roadways in North Pleasanton. The largest increases are projected to occur on Hopyard Road, Hacienda Drive, Santa Rita Road, El Charro Road, Stoneridge Drive, and West Las Positas Boulevard. Major arterials in other parts of town for which major traffic increases are projected include Valley Avenue, Bernal Avenue, Sunol Boulevard and Stanley Boulevard.

In all cases, projected ADT's and intersection levels were used to design roadway widths and intersection improvements. The only exception is El Charro, where the unusual mix of gravel trucks and autos warrants 4-6 lanes as a safety mitigation.

Congestion at **major intersections** also will increase, although not to the point of impairing the free flow of traffic on arterials outside the Downtown. Table III-4 and Figure III-4 compare volume to capacity ratios and resulting Levels of Service in 1985 with those projected at General Plan buildout. Major increases in Levels of Service are projected at Foothill Road and Canyon Road; Hopyard Road at Owens Drive; North Valley Trails Drive and Valley Avenue; Santa Rita Road at West Las Positas Boulevard; Stoneridge Drive and Mohr Avenue; Stoneridge Drive at Springdale Avenue and I-680; West Las Positas Boulevard at Hacienda Drive; Bernal Avenue at Vineyard Avenue; as well as intersections within the downtown area. The downtown area is an exception because of its high density of development and minimal rights-of-way to enable improvements. Most thriving downtown areas, in fact, accept congestion as a necessary by-product of increased patronage. The Land Use Element proposes that a Specific Plan be prepared for the downtown area to improve local and through traffic as well as parking and other considerations.

Traffic volumes along **I-580 and I-680** also will increase significantly from a combination of development within Pleasanton and an increase in through traffic from other areas. A major shift in land development in the Tri-Valley from mostly residential to a mix of residential and employment will result in marked increases in commute hour traffic into Pleasanton in the morning and out of Pleasanton in the afternoon. Table III-5 compares peak hour volumes on these two freeways in 1985 with those projected at buildout. Although both freeways will

experience congestion in the future, traffic levels are projected to be much lower than they would be without improvements (5). These improvements include proposed freeway widenings, interchange improvements, BART, bus and light rail service, carpooling and other transportation alternatives which are part of the Pleasanton circulation system.

Proposed Roadway Improvements

In order to accommodate buildout of the General Plan, a wide range of street, highway and intersection improvements must be constructed in a timely fashion. Many roadway improvements were installed prior to development of major business parks in North Pleasanton resulting in the uncongested Levels of Service in Pleasanton today. Improvements must continue to be installed prior to large amounts of residential and employment growth or congestion will result. Therefore, the timing of improvements must be coordinated with anticipated occupancies of large residential and commercial projects in order for acceptable Levels of Service to be maintained.

Figure III-5 illustrates **roadway improvements** which need to be constructed along critical roadway segments and at major intersections. Existing configurations are superimposed with needed improvements in five year increments. Projects approved for funding by Caltrans, the City, or private developers between 1985 and 1990 are shown as a first priority. Projects which will be needed sometime after 1990 but which do not currently have identified funding sources are a second priority for construction. The policies and programs of the City support the installation and financing of these improvements by developers of new projects as they are built. However, if development is allowed to proceed in an area without these improvements, congestion is likely to occur beyond the standards established by the City.

Table III-7 summarizes the roadway lane configurations required to support full development of the Planning Area. Major Road improvements which have not been constructed include segments of Bernal Avenue, Del Valle Parkway, El Charro Road, Foothill Road, Hacienda Drive, Owens Drive, Sunol Boulevard and Vallecitos Road.

Proposed Traffic Management Improvements

In order to make roadway improvements effective, additional traffic mitigations should be installed. Traffic signals, for example, are a critical mechanism to ensure the safest and most efficient flow of traffic. Figure III-6 shows existing traffic signal locations and those proposed to facilitate the free flow of traffic at potentially congested intersections.

Traffic counts are another mechanism used by the City to ensure that roadway improvements are effective and traffic is flowing according to projections. The City requires **annual traffic**

counts to be taken on major arterial and collector streets throughout the community. Average Daily Traffic (ADT) counts are conducted at 58 locations and peak hour turning movement counts are taken at 80 major intersections. These existing traffic counts are then used as a basis for verifying future traffic volumes and service levels throughout the community. The City uses this information to monitor traffic increases over time and improvements in traffic flow caused by roadway and other improvements. This information also serves as the basis for analyzing the traffic impacts of individual development projects. The overriding purpose of these traffic studies is to anticipate and mitigate traffic congestion on City streets according to adopted standards.

The City is in the process of establishing a **computerized traffic monitoring** and signalization system. The hardware has been purchased and the software and signal coordinators are being installed to enable automatic tabulation of traffic counts and Levels of Service as cars pass over sensors built into City intersections. This system is fully operational at nine intersections, however, it will take several years to complete the system to the ultimate size of 33 intersections. The system will provide a reliable check against annual traffic counts. The City will give a high priority to completing this system as soon as possible to ensure that future traffic congestion is anticipated and mitigated, where necessary.

Because of community concern over traffic congestion, several citizens committees have recommended that City Council and staff analyze the results of traffic monitoring data on a semi-annual basis. This will enable the City Council to anticipate future problems and require improvements in time to prevent City standards from being exceeded.

Potential Problem Intersections Should Improvements Not Be Installed

To illustrate the necessity of constructing the roadway improvements identified in the Pleasanton Plan according to the schedule proposed in Figure III-5, the City conducted a "what if" scenario which projected intersection levels of service without proposed improvements. Table III-6 summarizes the resulting congestion levels at fifteen intersections which would reach Levels of Service of E or F without appropriate improvements. As development in Pleasanton continues, these intersections, in particular, should be monitored relative to City Level of Service standards. If LOS E is being approached, improvements may be required ahead of schedule. Intersection improvements are shown on Figure III-7.

Proposed Funding Mechanisms

The City is utilizing all available means to ensure that roadway improvements are financed and constructed according to schedule.

Pleasanton has extensively used **assessment districts** to help the City pay for street, highway and intersection improvements. For example, the City has required commercial and industrial developers in North Pleasanton to participate in an assessment district to finance freeway interchange and arterial improvements. This North Pleasanton Improvement District is the largest privately financed roadway improvement project in the State of California amounting to about \$90 million. Neither homeowners nor the City will have to pay for these improvements although the benefits of increased roadway capacity and improved traffic flow will extend to all users of City streets.

The City has committed \$4 million of **general fund revenues**, as approved by the voters in a recent election, to help fund the extension of Valley Avenue to Stanley Boulevard. This improvement will make a significant contribution to the loop roadway system which routes through traffic around the downtown area.

The State of California has included the widening of I-680 between Fremont and I-580 in the State Transportation Improvement Plan for 1986-87. The two additional lanes are to be added in the freeway median. The State of California is also committed to funding the I-680/West Las Positas Boulevard Interchange, however, it has not been included in the State Transportation Improvement Plan.

ALTERNATIVE TRANSPORTATION MODES

Public Transit

Existing public transit service in Pleasanton currently is limited to BART/AC Transit **express bus service** and privately operated shuttle buses run by Hacienda Business Park. The BART express system operates four lines between the Hayward, Bayfair, and Walnut Creek BART stations and various points in Pleasanton, as shown in Figure III-9. This system currently substitutes for BART rail service.

The Hacienda Business Park **shuttle bus** provides service from the Bayfair BART station directly to Hacienda Business Park during morning and evening commute hours. During the day, the shuttle provides internal service within the business park and at lunchtime transports workers to shopping and restaurant locations in other parts of Pleasanton.

In the future, several transit improvements are planned for Pleasanton as part of the City's overall Transportation Systems Management (TSM) strategy (6)(7). In 1986, local bus service will be provided by the **Livermore-Amador Valley Transit Authority** (LAVTA) (8). The system will provide both peak hour and off-peak hour local bus service throughout Pleasanton and Dublin on four different routes. Beginning in 1987, the system will provide connections to Livermore's RIDE0 bus system along Stanley

Boulevard. Buses will run during daytime hours and will provide service within walking distance to most residential and employment locations within the Planning Area as shown in Figure III-9.

The **Bay Area Rapid Transit District (BART)** has adopted a fixed rail alignment which is planned to extend BART service from San Leandro along the I-580 right-of-way to Castro Valley, Dublin, Pleasanton and Livermore (9). BART stations are planned in Castro Valley, near Stoneridge Mall, within Hacienda Business Park, in Livermore and near the Lawrence Livermore Laboratory. Although BART has included this extension within their long range improvement plans, service to the Tri-Valley will compete with other areas for funding. Despite the uncertainty of timing the BART extension to this area, the Pleasanton Plan calls for reserving the right-of-way along I-580 as well as their two BART station sites planned within the Planning Area.

A transportation corridor also is being planned along the abandoned Southern Pacific Railroad right-of-way which extends from Concord to Pleasanton and from Fremont to Tracy. These corridors could be used for **light rail transit** sometime in the future. Alameda and Contra Costa Counties are sponsoring a joint feasibility study (10)(11)(12) of these corridors to determine the type of transportation system best suited for this corridor, including light rail, buses, bicycles and other modes of transportation.

The City currently provides a **Dial-A-Bus** service for senior and handicapped residents. About 60% of the program's operating budget is provided by the City. The Department of Parks and Community Services provides drivers who operate the bus service on a regular schedule during weekday hours and by appointment during evenings and weekends.

Transportation Systems Management

Transportation Systems Management (TSM) is a broad term referring to the efficient use of all types of transportation but usually includes non-roadway improvements measures such as ridesharing, flextime, bicycling, walking, telecommuting and other means to reduce automobile trips. The City of Pleasanton has adopted the first city-wide Transportation Systems Management (TSM) ordinance (13) in the nation. The TSM ordinance calls for employers to reduce peak hour traffic trips by 45% between 1985 and 1989. The ordinance requires all employers and business parks to better utilize existing roadways and transit alternatives in order to maintain the City's standard of Level of Service D at all major intersections outside of Downtown. The City is participating in this joint effort with employers to encourage commuters to use means other than driving to work alone during peak hour periods. The ordinance gives employers the flexibility to pursue whatever transportation options are most effectively suited to the needs of their employees.

The City employs a full time **Transportation Coordinator** who assists employers in analyzing their transportation patterns through an annual survey, works with large employers' coordinators to promote transportation alternatives, answers public inquiries, and monitors the effectiveness of trip reduction programs. The Transportation Coordinator also meets regularly with the **TSM Task Force** which is a group consisting of representatives from large companies and business complexes whose responsibility is to incorporate transportation alternatives into the process of managing businesses in Pleasanton. These measures could include company policies in support of flextime, provision of bicycle racks and shower facilities on-site, sale of transit passes, preferential parking spaces for ridesharers, etc.

Pleasanton currently has a network of **bicycle paths** serving many parts of the Planning Area. It is the City's intent to provide additional bicycle paths and lanes, where sufficient right-of-way and funding exists, at the time new roadways are constructed or improved. Existing and future bicycle routes are shown in Figure III-10.

The two railroads, Western Pacific and Southern Pacific, which formerly owned and operated separate **rail facilities** in Pleasanton have recently consolidated services using the former Western Pacific tracks. The consolidation has served the public in several ways by eliminating potentially dangerous crossings, by eliminating the noise and traffic disruption along the old Southern Pacific tracks and by freeing up the Southern Pacific right-of-way for other uses. The City is investigating alternative uses for this right-of-way including light rail, a through traffic bypass of First Street, parking and commercial uses.

The resulting consolidated rail service along the Western Pacific tracks is provided by both railroad companies exclusively for transporting freight. Proposed rail service schedules call for 13 trips per day on the average in the foreseeable future (14).

Pleasanton contains a **heliport** located within the Hacienda Business Park to provide service for businesses within the park. The heliport is located in the southwest corner of Chabot and Owens Drive and is a temporary facility planned to operate over a five year period until a permanent facility can be built adjacent to the proposed BART/Light Rail station at I-580 and the Southern Pacific tracks. The temporary facility will not provide regularly scheduled passenger or freight service but only intermittent service for business travelers, not to exceed 60 trips per week. The heliport will be available for public service in the event of an emergency. The flight path will follow I-580 and landing approaches will be from the north and east to minimize noise impacts within the community.

The Pleasanton Plan also proposes several locations within the Planning Area for use as **park and ride lots**. These lots should

be set aside for use by residents of Pleasanton to park their cars and encourage coordinated locations for ridesharing and transit use. These proposed locations should be evaluated by City and Caltrans staff to determine exact locations, acreage, improvements and operating procedures prior to their purchase or lease for City residents. These proposed locations are shown in Figure III-9.

In addition, a one-half cent **sales tax** measure, similar to one recently adopted by voters in Santa Clara County, is being investigated to fund transportation improvements throughout Alameda County. A possible first step, should the measure be approved by the voters, would be to conduct a Tri-Valley multi-modal transportation study to determine the best mix of various transit modes, TSM provisions and roadway improvements to accommodate future growth.

Circulation Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

III. CIRCULATION GOALS, POLICIES AND PROGRAMS

Streets and Highways

Goal 1: To develop a safe, convenient and uncongested **circulation system**.
(GME, Goal 7, p. 16)

Goal 2: To develop and manage a **street and highway system** which accommodates future growth while maintaining acceptable levels of service.

Policy 1: Complete the City's street and highway system according to the **street classifications** shown on the Pleasanton Plan Map. (OPR, p. 157)

Program 1.1: Require new developments to pay their fair share of planned **roadway improvements**.

Program 1.2: Support the use of **assessment districts** to equitably spread the cost of new roadways and improvements and to facilitate installation of improvements prior to their being needed.

Program 1.3: Preserve **rights-of-way** needed for freeway improvements through dedication and according to Caltrans standards, as adjacent properties develop.

Program 1.4: Acquire the abandoned **Southern Pacific right-of-way** in downtown Pleasanton for circulation related use.

Policy 2: Phase development and **roadway improvements** so that Levels of Service do not exceed LOS D at major intersections outside the central business district.
(IGPRC, p. 29)

Program 2.1: Monitor **roadway intersections** to determine if Levels of Service are approaching City standards. (IGPRC, p. 45; EMC, p. 4)

Program 2.2: Require site-specific **traffic studies** for all major developments which have the potential to exceed LOS D.

Program 2.3: Require developers to implement the **mitigation measures** identified in site-specific traffic studies.

Program 2.4: Expedite the installation and calibration of the City's **traffic computer** to better monitor traffic flows and to automatically translate traffic volumes into Levels of Service. (IGPRC, p. 29)

Program 2.5: Report potential Level of Service exceedences in a **semi-annual report** to City Council and affected developers. (EMC, p. 4)

Program 2.6: Require whatever **mitigation measures** are necessary, including the withholding of building permits, to return intersections to acceptable levels, in the event that LOS D is exceeded.

Policy 3: Facilitate the **free flow of vehicular traffic** on major arterials. (IGPRC, p. 44)

Program 3.1: Expedite the installation of **traffic signal coordinators** which will synchronize traffic signals on major City streets. (IGPRC p. 44)

Program 3.2: Discourage non-local and commercial traffic from using local residential streets by the use of **route signs** and a route map for trucks and through traffic for such traffic.

Program 3.3: Restrict **private access** to major arterials.

Policy 4: Design and regulate City Streets to minimize **traffic related impacts** on adjacent land uses.

Program 4.1: Provide setbacks, landscaping, soundwalls, and other methods to protect **adjacent land uses** from safety, noise and air quality impacts associated with traffic on arterials, such as El Charro Road.

Program 4.2: Restrict **truck traffic** to deliveries on all City streets except truck routes, such as Stanley Boulevard.

Program 4.3: Require all **gravel trucks** to use the El Charro Road route as the sole access to I-580 and I-680 beginning in 1995 and allow the use of First Street in the meantime.

Policy 5: Adhere to City **design standards** for streets in new developments. (OPR, p. 157)

Program 5.1: Incorporate City **design standards** for arterials, collectors, local public and private streets as part of the City's review of new developments.

Policy 6: Maximize **traffic safety** for automobile, transit, bicycle users, and pedestrians.

Program 6.1: Allocate a share of each year's **Capital Improvement Program** (15) to street maintenance, roadway improvements and traffic management hardware.

Program 6.2: Monitor and record **roadway accidents** and recommend safety improvements, where needed.

Program 6.3: Separate vehicular, **bicycle and pedestrian traffic**, wherever possible.

Program 6.4: Restrict **parking** near intersections to ensure visibility and traffic safety. (IGPRC, p. 33)

Program 6.5: Require the installation of **bus turnouts** and **shelters** along planned transit routes.

Policy 7: Require adequate **on and off street parking**. (OPR (4), p. 157)

Program 7.1: Enforce the **parking provisions** of the City's Zoning Ordinance for all projects, including Planned Unit Developments.

Policy 8: Cooperate with **neighboring jurisdictions** to develop a parallel arterial system to relieve congestion on I-580 and I-680.

Program 8.1: Initiate discussions with Livermore, Dublin, and Alameda County to plan for **arterial extensions** of Stoneridge Drive to the east, an extension of Hacienda Drive to the northwest and other alternatives to area freeways.

Policy 9: Cooperate with **regional transportation agencies** to study and plan for street and highway improvements.

Program 9.1: **Cooperate** with Caltrans on their I-580/I-680 studies, with the Metropolitan Transportation Commission (MTC) on their I-680 Corridor Study (16), with Alameda and Contra Costa Counties on traffic studies and roadway improvement projects and with Tri-Valley Cities and Counties in studying and mitigating local roadway problems.

Alternative Transportation Modes

Goal 3: To provide a **multi-modal transportation system** which encourages efficient use of existing and future facilities.
(OPR, p. 157)

Policy 10: Reduce the total number of **Average Daily Traffic (ADT)** trips throughout the City.

Program 10.1: Promote the use of transit, ridesharing, bicycling and walking to the general public through the City's **Transportation Coordinator**.

Policy 11: Reduce the percentage of Average Daily Traffic trips and evenly distribute them throughout the **peak hours**. (IGPRC, p. 29)

Program 11.1: Promote the use of flextime and other measures to employers and employees through the City's **Transportation Systems Management (TSM) Ordinance** and TSM Task Force.

Policy 12: Encourage high intensity development in locations convenient to **public transit** facilities. (GME, Policy 29, p. 19)

Program 12.1: Designate **high intensity uses** along major arterials and within walking distance of transit stops.

Policy 13: Support the continued operation of the **Livermore Amador Valley Transit Authority (LAVTA)**.

Program 13.1: Provide City representatives on the **LAVTA Board** and seek State funds to support local transit.

Program 13.2: Monitor **bus ridership** and adjust schedules and routes as needed.

Policy 14: Support the feasibility study and possible construction of a **light rail transit** system along the I-680 corridor, from Pleasanton to Walnut Creek and from Tracy to Fremont. (IGPRC, p. 51)

Program 14.1: Participate in **subregional studies** (10)(11)(12), funding, acquisition and Joint Powers Agreements to facilitate such systems. (IGPRC, p. 51)

Policy 15: Encourage the extension of **BART** from Hayward to Livermore following the I-580 alignment. (IGPRC, p. 49)

Program 15.1: Require developers of property adjacent to the proposed BART alignment to reserve adequate acreage for future **BART stations** and facilities. (IGPRC, p. 49)

Program 15.2: Utilize future BART stations and other areas as interim **Park & Ride facilities**. (IGPRC, p. 52)

Policy 16: Support **paratransit services** to elderly and handicapped residents of Pleasanton.

Program 16.1: Fund capital and operating expenditures for the City's **Dial-A-Bus** program.

Policy 17: Create and maintain a safe, convenient and effective **bicycle system** which encourages increased bicycle use. (IGPRC, p. 30)

Program 17.1: Integrate bicycle lanes or separate **bikeways** into street projects, wherever possible. (IGPRC, p. 30)

Program 17.2: Require the provision of adequate **bicycle storage facilities** in future developments. (IGPRC, p. 31)

Program 17.3: Maintain **bicycle routes** with adequate sweeping and pavement repairs.

Policy 18: Create and maintain a safe and convenient **pedestrian system** which encourages walking as an alternative to driving.

Program 18.1: Continue to require developers to finance and install **sidewalks** and pedestrian pathways in future developments.

Program 18.2: Develop a pedestrian and equestrian **trail system** which connects all major portions of the Planning Area.

Program 18.3: Cooperate with East Bay Regional Parks District in completing a regional **trail system** (17) and with Zone 7 in completing its Arroyo Management Plan (18).

Policy 19: Require **undergrounding** of pipelines, electrical transmission and distribution lines, whenever possible. (OPR, p. 158)

Program 19.1: Work with **PG&E** to choose the most appropriate location and design for electrical transmission and distribution lines in the southeast hills and along the I-580 corridor.

Definitions: **Arterial** - A roadway which feeds through traffic to freeways, provides access to adjacent land uses primarily at intersections, and features traffic control measures.

Capital Improvement Program - A share of this program is budgeted for street maintenance, roadway improvements and traffic management hardware.

Collector - A roadway which provides access to adjacent land uses and feeds local traffic to arterials.

Freeway - A roadway characterized by limited access and grade separations which primarily serves long distance trips.

JPA - Joint Powers Authority

Level of Service - Standard for evaluating traffic congestion at critical intersections (Table III-2).

Paratransit - Non-fixed route transit. Most commonly, this term refers to demand responsive systems which are operated to meet the special needs of seniors and handicapped individuals.

Park & Ride Lot - A facility which allows for parking a vehicle or a bicycle for the purpose of ridesharing by carpool, vanpool or bus.

Traffic Signal Controller - Part of the traffic computer system which enables the City to synchronize traffic signals on major arterials and improve traffic flow.

Footnotes

- (1) City of Pleasanton, Design Guide 1984, February 1984
- (2) City of Pleasanton, Municipal Code, Title 18, Section 18.88
- (3) TJKM, Transportation Consultants, November 1985 Pleasanton Traffic Counts, December 1985
- (4) TJKM, Tri-Valley Transportation Study - 1985, May 1986
- (5) TJKM, NPID Freeway Improvement Study, forthcoming
- (6) Arthur Bauer Associates and TJKM, Transit's Role in Reducing Tri-Valley Congestion in 2010, October 1985
- (7) Arthur Bauer Associates, Transit Alternatives in the I-580 Corridor, June 1986
- (8) DKS Associates, Pleasanton/Dublin Transit System Supplemental Study - Final Report, April 1985
- (9) DeLeuw Cather & Co., DKS Associates, BART District Livermore Pleasanton Extension Study Update Analysis - Final Report, December 1983
- (10) Alameda County Public Works Agency in association with Arthur Bauer and Associates and DKS Associates, Feasibility Study for Light Rail Transit - Draft, November 1985
- (11) Arthur Bauer and Associates, Review of the Abandoned San Ramon Branch Railroad, December 1985
- (12) DMJM, San Ramon Branch Light Transportation Feasibility Study, June 1986
- (13) City of Pleasanton, Transportation Systems Management Ordinance No. 1154, October 1984
- (14) DeLeuw, Cather & Company, Final Environmental Impact Report Sunol-Pleasanton-Livermore Railroad Track Consolidation, February 1979
- (15) City of Pleasanton, Three year Capital Improvement Program 1985-86 through 1987-88, May 1985
- (16) Metropolitan Transportation Commission, Initial Findings of the Interstate 680 and Interstate 580 Corridor Study, Phase 1, Summary Report, October 1984
- (17) East Bay Regional Park District, Master Plan - 1980, 1980
- (18) Kent Watson & Associates, Final Arroyo Management Plan, January 1985

TABLE III-1
TYPICAL ROADWAY CAPACITIES

<u>Roadway Type</u>	<u>Per Direction Per Hour</u>	<u>Two-Way Average Daily Traffic*</u>
Two lane local streets**	-	500
Two lane local collector streets**	-	2,000 - 3,000
Two lane collector streets**	-	6,000 - 9,000
Two lane arterial streets	875	15,000
Four lane arterial streets	750	30,000
Six lane arterial streets	750	45,000
Six lane freeway	2,000	120,000
Eight lane freeway	2,000	160,000
Ten lane freeway	2,000	200,000

* Values based on average daily traffic are volumes based on typical traffic conditions rather than a true physical roadway capacity.

** Values are based on the "Environmental Capacity" of residential streets under typical conditions.

TABLE III-2
SUMMARY OF LEVELS OF SERVICE FOR INTERSECTIONS

<u>Level of Service</u>	<u>Type of Flow</u>	<u>Delay</u>	<u>Maneuverability</u>	<u>V/C Ratio*</u>
A	Stable Flow	Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	Turning movements are easily made, and nearly all drivers find freedom of operation.	0.00-0.60
B	Stable Flow	Slight delay. If signalized, an occasional approach phase is fully utilized.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	0.61-0.70
C	Stable Flow	Acceptable delay. If signalized a few drivers arriving at the end of a queue may occasionally have to wait through one signal cycle.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71-0.80
D	Approaching Unstable Flow	Tolerable delay. Delays may be substantial during short periods, but excessive back-ups do not occur.	Maneuverability is severely limited during short periods due to temporary back-ups.	0.81-0.90
E	Unstable Flow	Intolerable delay. Delay may be great-up to several signal cycles.	There are typically long queues of vehicles waiting upstream of the intersection.	0.91-1.00
F	Forced Flow	Excessive delay.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	Varies*

* In general, V/C ratios cannot be greater than 1.00, unless the lane capacity assumptions are too low. Also, if future demand projections are considered for analytical purposes, a ratio greater than 1.00 might be obtained, indicating that the projected demand would exceed the capacity.

References: - Highway Capacity Manual, Special Report No. 209, Transportation Research Board, 1985.
 - Highway Capacity Manual, Special Report No. 87, Highway Research Board, 1965.
 - TJKM

TABLE III-3
EXISTING AND FUTURE AVERAGE DAILY TRAFFIC

<u>Area</u>	<u>1985 ADT</u>	<u>General Plan Buildout ADT</u>	<u>Area</u>	<u>1985 ADT</u>	<u>General Plan Buildout ADT</u>
1. Foothill s/o I-580	32,336	42,400	38. Bernal w/o I-680	-	7,100
2. Canyon w/o Foothill	5,477	10,200	39. Bernal e/o Valley	8,550	20,400
3. Canyon e/o Foothill	13,014	23,000	40. Sunol e/o I-680	15,652	26,700
4. Stoneridge e/o Foothill	9,850	1,800	41. Valley n/o Sunol	-	12,500
5. Stoneridge w/o Stoneridge Mall	-	25,400	42. Sunol s/o Main/First	19,085	27,400
6. Stoneridge e/o Stoneridge Mall	-	47,300	43. Bernal e/o First/Sunol	-	7,100
7. Foothill s/o Stoneridge	11,278	10,500	44. First s/o Rose/Neal	13,641	20,600
8. Foothill n/o West Las Positas	9,700	10,100	45. Kottlinger e/o First	3,178	5,000
9. Foothill s/o West Las Positas	8,522	9,600	46. Vineyard e/o First	11,460	8,100
10. West Las Positas e/o Muirwood	7,120	11,800	47. First n/o Vineyard	14,054	45,500
11. Foothill n/o Bernal	6,418	9,800	48. Stanley e/o California	19,686	20,500
12. Foothill s/o Bernal	3,748	7,600	49. Stanley e/o Valley	-	27,200
13. Hopyard n/o Owens	38,947	53,700	50. Valley n/o Stanley	-	24,900
14. Johnson n/o Owens	5,823	8,800	51. Bernal s/o Stanley	-	16,200
15. Owens w/o Hopyard	7,578	19,600	52. Main s/o Rose/Neal	12,312	16,100
16. Owens e/o Hopyard	-	21,700	53. Peters s/o Division	6,047	6,100
17. Hacienda s/o I-580	-	35,800	54. Ray e/o Main	9,102	8,100
18. Hopyard n/o Gibraltar	30,579	29,100	55. Main s/o Del Valle	19,359	21,100
19. Hopyard n/o Stoneridge	27,784	33,200	56. Del Valle e/o Main	11,493	9,800
20. Stoneridge e/o Johnson	16,470	34,100	57. Del Valle e/o First	-	15,300
21. Stoneridge w/o Hopyard	11,962	21,100	58. Santa Rita n/o Del Valle	25,032	20,600
22. Stoneridge e/o Hopyard	6,883	18,500	59. Black w/o Santa Rita	8,281	8,400
23. Hopyard s/o Stoneridge	26,798	42,900	60. Valley w/o Santa Rita	13,280	14,500
24. West Las Positas w/o Hopyard	12,213	29,100	61. Valley e/o Santa Rita	6,349	24,800
25. West Las Positas e/o Hopyard	8,114	27,200	62. Santa Rita n/o Valley	23,054	41,700
26. Hopyard s/o West Las Positas	34,709	42,300	63. Mohr e/o Santa Rita	3,059	3,500
27. Valley w/o Hopyard	8,807	22,600	64. Stoneridge e/o Santa Rita	2,864	16,200
28. Valley e/o Hopyard	14,053	12,900	65. Stoneridge w/o Santa Rita	-	20,400
29. Hopyard s/o Valley	18,153	18,300	66. Santa Rita n/o Stoneridge	26,789	42,200
30. Black e/o Hopyard	6,606	6,100	67. West Las Positas w/o Santa Rita	12,068	26,600
31. Hopyard n/o Del Valle	13,701	10,300	68. Owens n/o West Las Positas	-	19,400
32. Del Valle e/o Hopyard	1,030	7,600	69. West Las Positas e/o Santa Rita	9,570	8,500
33. Division s/o Del Valle	12,172	2,800	70. Santa Rita s/o Pimlico	22,161	46,900
34. Valley n/o Bernal	7,038	13,900	71. Rosewood w/o Santa Rita	-	21,100
35. Valley s/o Bernal	-	17,000	72. Pimlico e/o Santa Rita	5,768	14,500
36. Rose e/o Valley	-	5,000	73. El Charro s/o Friesman	7,830	21,200
37. Bernal w/o Valley	15,442	25,500	74. Stoneridge w/o El Charro	-	18,300
			75. Bernal s/o Angela	-	2,000

TABLE III-4

EXISTING AND FUTURE VOLUME-TO-CAPACITY RATIOS
AND LEVELS OF SERVICE

INTERSECTION	N-S STREET	E-W STREET	November 1985				General Plan Build-Out			
			AM		PM		AM		PM	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
302	FOOTHILL RD.	CANYON WY.	0.47	A	0.85	D	0.85	D	0.81	D
303	FOOTHILL RD.	DEODAR WY.	0.45	A	0.78	C	0.44	A	0.41	A
304	FOOTHILL RD.	STONERIDGE DR.	0.56	A	0.55	A	0.40	A	0.21	A
305	FOOTHILL RD.	W.LAS POSITAS	0.48	A	0.42	A	0.10	A	0.10	A
306	FOOTHILL RD.	BERNAL AVE.	0.45	A	0.45	A	0.43	A	0.43	A
308	DOUGHERTY RD.	I-580 WB OFF	0.77	C	1.00	E	0.76	C	0.85	D
309	HOPYARD RD.	I-580 EB OFF	0.81	D	1.23	F	0.89	D	0.77	C
310	HOPYARD RD.	OWENS DR.	0.88	D	1.01	F	0.83	D	0.89	D
311	HOPYARD RD.	GIBRALTER DR.	0.62	B	0.87	D	0.51	A	0.51	A
312	HOPYARD RD.	MORSE DR.	0.39	A	0.38	A	0.39	A	0.76	C
313	HOPYARD RD.	STONERIDGE DR.	0.32	A	0.37	A	0.68	B	0.88	D
314	HOPYARD RD.	INGLEWOOD DR.	0.45	A	0.59	A	0.72	C	0.75	C
316	HOPYARD RD.	W.LAS POSITAS	0.45	A	0.47	A	0.78	C	0.87	D
317	HOPYARD RD.	N.VLLY.TRAILS	0.48	A	0.65	B	0.85	D	0.61	B
318	HOPYARD RD.	S.VLLY TRAILS	0.49	A	0.55	A	0.65	B	0.62	B
319	HOPYARD RD.	VALLEY AVE.	0.44	A	0.54	A	0.89	D	0.59	A
320	HOPYARD RD.	BLACK AVE.	0.55	A	0.70	B	0.37	A	0.39	A
321	HOPYARD RD.	DIVISION ST.	0.47	A	0.56	A	0.38	A	0.28	A
322	TASSAJARA RD.	I-580 WB OFF	0.41	A	0.52	A	0.84	D	0.63	B
323	SANTA RITA RD.	PIMLICO DR.	0.65	B	0.51	A	0.85	D	0.89	D
324	SANTA RITA RD.	ROSEWOOD DR.	0.63	B	0.64	B	0.73	C	0.87	D
325	SANTA RITA RD.	OLD SANTA RITA	0.41	A	0.42	A	0.53	A	0.56	A
326	SANTA RITA RD.	W.LAS POSITAS	0.44	A	0.51	A	0.81	D	0.89	D
327	SANTA RITA RD.	STONERIDGE DR.	0.33	A	0.35	A	0.84	D	0.90	D
328	SANTA RITA RD.	MOHR AVE.	0.36	A	0.46	A	0.90	D	0.87	D
329	SANTA RITA RD.	VALLEY AVE.	0.50	A	0.76	C	0.77	C	0.64	B
330	SANTA RITA RD.	BLACK AVE.	0.52	A	0.66	B	0.49	A	0.47	A
331	MAIN ST.	STANLEY BLVD.	0.64	B	0.77	C	0.65	B	0.68	B
332	MAIN ST.	ST.JOHN/RAY	0.74	C	0.91	E	0.95	E	0.92	E
333	MAIN ST.	ST.MARY ST.	0.63	B	0.80	C	0.80	C	0.86	D
334	MAIN ST.	ROSE /NEAL	0.53	A	0.74	C	0.91	E	0.84	D
335	MAIN ST.	ANGELA ST.	0.43	A	0.65	B	0.79	C	0.71	C
336	MAIN ST.	BERNAL/ABBIE	0.77	C	0.81	D	0.86	D	0.87	D
337	FIRST ST.	STANLEY BLVD.	0.52	A	0.68	B	0.54	A	0.71	C
338	FIRST ST.	RAY/VINEYARD	0.76	C	0.84	D	1.10	F	1.12	F
339	FIRST ST.	NEAL ST.	0.75	C	0.82	D	1.11	F	1.06	F
340	FIRST ST.	ANGELA ST.	0.55	A	0.60	A	0.90	D	0.86	D
341	FIRST ST.	ABBIE ST.	0.54	A	0.58	A	0.90	D	0.95	E
342	FIRST/SUNOL	MAIN ST.	0.66	B	0.56	A	0.83	D	0.87	D
344	SPRINGDALE AVE.	STONERIDGE DR.	0.31	A	0.46	A	0.87	D	0.67	B
345	STNRIDGE MALL	STONERIDGE DR.	0.27	A	0.43	A	0.60	A	0.85	D
346	I-680 SB OFF	STONERIDGE DR.	-		-		0.89	D	0.45	A
347	I-680 NB OFF	STONERIDGE DR.	-		-		0.86	D	0.64	B
348	JOHNSON DR.	STONERIDGE DR.	0.59	A	0.52	A	0.47	A	0.84	D
349	DENKER DR.	STONERIDGE DR.	0.42	A	0.36	A	0.50	A	0.81	D
350	680 SB RAMPS	W.LAS POSITAS	-		-		0.50	A	0.64	B
351	680 NB RAMPS	W.LAS POSITAS	-		-		0.79	C	0.58	A

TABLE III-4

EXISTING AND FUTURE VOLUME-TO-CAPACITY RATIOS
AND LEVELS OF SERVICE

INTERSECTION	N-S STREET	E-W STREET	V/C	November 1985				General Plan Build-Out			
				AM		PM		AM		PM	
				LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
352	I-680 SB OFF	BERNAL AVE.	0.52	A	0.61	B	0.44	A	0.66	B	
353	VALLEY AVE.	BERNAL AVE.	0.44	A	0.60	A	0.66	B	0.79	C	
354	I-680 NB OFF	BERNAL AVE.	0.42	A	0.52	A	0.60	A	0.38	A	
355	WILLOW RD.	OWENS DR.	-		-		0.46	A	0.61	B	
356	WILLOW RD.	GIBRALTER N.	0.18	A	0.22	A	0.34	A	0.60	A	
357	WILLOW RD.	STONERIDGE DR.	0.33	A	0.26	A	0.41	A	0.67	B	
358	WILLOW RD.	INGLEWOOD DR.	0.16	A	0.15	A	0.21	A	0.27	A	
359	WILLOW RD.	GIBRALTER S.	0.21	A	0.20	A	0.32	A	0.48	A	
360	WILLOW RD.	W.LAS POSITAS	0.29	A	0.33	A	0.54	A	0.44	A	
361	HACIENDA DR.	OWENS DR.	-		-		0.56	A	0.56	A	
362	HACIENDA DR.	GIBRALTER N.	0.16	A	0.18	A	0.36	A	0.51	A	
363	HACIENDA DR.	STONERIDGE DR.	0.17	A	0.28	A	0.42	A	0.76	C	
364	HACIENDA DR.	GIBRALTER S.	0.18	A	0.18	A	0.61	B	0.78	C	
365	HACIENDA DR.	W.LAS POSITAS	0.27	A	0.36	A	0.84	D	0.83	D	
366	GIBRALTER DR.	STONERIDGE DR.	0.20	A	0.22	A	0.47	A	0.74	C	
367	STONERIDGE DR.	W.LAS POSITAS	0.29	A	0.31	A	0.53	A	0.56	A	
368	OWENS DR.	W.LAS POSITAS	-		-		0.70	B	0.60	A	
369	OWENS DR.	ROSEWOOD DR.	-		-		0.60	A	0.71	C	
370	OLD SANTA RITA	ROSEWOOD DR.	-		-		0.22	A	0.23	A	
371	VALLEY AVE.	STANLEY BLVD.	-		-		0.87	D	0.89	D	
372	FOOTHILL RD.	LAUREL CREEK	0.51	A	0.52	A	0.33	A	0.48	A	
373	CORONADO LN.	W.LAS POSITAS	0.24	A	0.29	A	0.55	A	0.78	C	
374	FALLON RD.	I-580 WB OFF	0.19	A	0.15	A	0.79	C	0.85	D	
375	EL CHARRO RD.	I-580 EB OFF	0.18	A	0.17	A	0.60	A	0.63	B	
376	FOOTHILL RD.	CASTLEWOOD DR.	0.24	A	0.27	A	0.52	A	0.60	A	
378	BERNAL AVE.	VINEYARD AVE.	0.41	A	0.42	A	0.83	D	0.87	D	
380	EL CHARRO RD.	STONERIDGE DR.	-		-		0.46	A	0.38	A	
381	CHABOT DR.	GIBRALTER DR.	0.22	A	0.33	A	0.46	A	0.85	D	
382	CHABOT DR.	OWENS DR.	0.22	A	0.45	A	0.42	A	0.34	A	
386	HACIENDA DR.	I-580 WB OFF	-		-		0.88	D	0.76	C	
387	HACIENDA DR.	I-580 EB OFF	-		-		0.88	D	0.52	A	
398	JOHNSON DR.	OWENS DR.	0.29	A	0.34	A	0.44	A	0.85	D	
405	CHABOT DR.	STONERIDGE DR.	0.21	A	0.22	A	0.67	B	0.81	D	
437	VALLEY AVE.	BUSCH RD.	-		-		0.62	B	0.53	A	
442	CALIFORNIA BLVD.	STANLEY BLVD.	0.55	A	0.83	D	0.70	B	0.69	B	
453	PAYNE RD.	W.LAS POSITAS	0.25	A	0.26	A	0.66	B	0.68	B	
901	SAN RAMON RD.	I-580 WB OFF	-		-		0.59	A	0.61	B	
903	FOOTHILL RD.	I-580 EB OFF	-		-		0.65	B	0.77	C	

TABLE III-5

PEAK HOUR TRAFFIC CONDITIONS - INTERSTATE 580

Location on I-580	Existing					GENERAL PLAN BUILDOUT		
			Capacity	Volume	LOS	Capacity	Volume	LOS
W/O FOOTHILL ROAD	EB	AM	8000	3037	A	8000	9080	F
		PM	8000	4012	A	8000	3520	A
	WB	AM	8000	2680	A	8000	2610	A
		PM	8000	3276	A	8000	9800	F
W/O I-680	EB	AM	8000	3324	A	10000	8710	D
		PM	8000	3743	A	10000	3920	A
	WB	AM	8000	3583	A	10000	2720	A
		PM	8000	3672	A	10000	8680	D
W/O HOPYARD ROAD	EB	AM	8000	4161	A	12000	13490	F
		PM	8000	4740	A	12000	5050	A
	WB	AM	8000	4596	A	12000	3410	A
		PM	8000	4236	A	12000	12810	F
W/O HACIENDA DRIVE	EB	AM	8000	3873	A	12000	11900	E
		PM	8000	5297	B	12000	5290	A
	WB	AM	8000	5000	B	12000	3890	A
		PM	8000	3622	A	12000	12070	F
W/O SANTA RITA ROAD	EB	AM	8000	3873	A	12000	8030	B
		PM	8000	5297	B	12000	6660	A
	WB	AM	8000	5000	B	12000	5250	A
		PM	8000	3622	A	12000	9100	C
W/O EL CHARRO ROAD	EB	AM	8000	3750	A	10000	6940	B
		PM	8000	5096	B	10000	5600	A
	WB	AM	8000	5057	B	10000	5080	A
		PM	8000	3411	A	10000	6790	B

PEAK HOUR TRAFFIC CONDITIONS - INTERSTATE 680

Location on I-680			Existing			GENERAL PLAN BUILDOUT		
			Capacity	Volume	LOS	Capacity	Volume	LOS
S/O I-580	NB	AM	4000	2468	B	10000	4560	A
		PM	4000	2555	B	10000	7390	C
	SB	AM	4000	2417	A	10000	6580	B
		PM	4000	2396	A	10000	5300	A
S/O STONERIDGE DRIVE	NB	AM	4000	2468	B	8000	6300	C
		PM	4000	2555	B	8000	5000	B
	SB	AM	4000	2417	A	8000	4730	A
		PM	4000	2396	A	8000	6170	C
S/O W.LAS POSITAS	NB	AM	4000	2468	B	8000	6710	D
		PM	4000	2555	B	8000	5050	B
	SB	AM	4000	2417	A	8000	4900	B
		PM	4000	2396	A	8000	7150	D
S/O BERNAL AVE	NB	AM	4000	2368	A	8000	6150	C
		PM	4000	2658	B	8000	4320	A
	SB	AM	4000	2867	C	8000	4310	A
		PM	4000	2141	A	8000	6510	D
S/O SUNOL BLVD	NB	AM	4000	2293	A	8000	7560	E
		PM	4000	3385	D	8000	4660	A
	SB	AM	4000	2919	C	8000	4620	A
		PM	4000	2531	B	8000	7470	E

TABLE III-6

CRITICAL INTERSECTION IMPROVEMENTS

No.	Intersection Name	Future V/C & LOS w/o Improvements				Improvements	Future V/C & LOS w/ Improvements			
		A.M.		P.M.			A.M.		P.M.	
		V/C	LOS	V/C	LOS		V/C	LOS	V/C	LOS
310	Hopyard Rd./Owens Dr.	0.83	D	1.53	F*	Restripe & Modify Median for WB triple right and modify for 4 lanes NB thru.	0.83	D	0.89	D
319	Hopyard Rd./Valley Ave.	1.30	F*	0.72	C	Restripe EB for exclusive double left.	0.89	D	0.59	A
322	Tassajara Rd./I-580 WB Off	1.75	F*	2.30	F*	Modify Interchange Install Signals	0.84	D	0.63	B
323	Santa Rita Rd./Pimlico Dr.	1.23	F*	1.22	F*	Modify Interchange	0.85	D	0.85	D
327	Santa Rita Rd./ Stoneridge Dr.	0.99	E	0.93	E	Construct Stoneridge w/o Santa Rita + NB/SB double lefts.	0.84	D	0.90	D
329	Santa Rita Rd./Valley Ave.	1.50	F*	1.19	F*	SB double left; WB free right, 2 thru, 1 left; NB double left; + 1 EB left; remove split phase signal.	0.77	C	0.64	B
331	Main St./Del Valle Pkwy.	0.68	B	0.97	E	Add 1 SB thru lane, 1 WB thru lane, & 2 EB lanes. Eliminate jog in street.	0.60	A	0.63	B
337	First St./Del Valle Pkwy.	0.79	C	0.85	D	Del Valle extension e/o First St., NB/SB 2 thru lanes.	0.51	A	0.64	B
342	First St./Bernal Ave.	1.00	E	0.97	E	Bernal extension NB/EB double lefts.	0.76	C	0.85	D
345	Stoneridge Dr./ Stoneridge Mall Rd.	0.89	D	1.18	F*	SB triple left, WB double right, EB 3 lanes thru.	0.60	A	0.85	D
348	Stoneridge Dr./Johnson Dr.	0.68	B	1.21	F*	SB exclusive, SB double right, EB/WB 3 lanes thru EB double left.	0.47	A	0.84	D
371	Valley Ave./Stanley Blvd.	1.24	F*	1.30	F*	Valley extension, EB 2 lanes thru, WB 2 thru & 1 exclusive right lane.	0.87	D	0.89	D
374	Fallon Rd./I-580 WB Off	1.55	F*	1.47	F*	Modify Interchange Install Signals	0.79	C	0.83	D
375	El Charro Rd./I-580 EB Off	1.16	F*	1.13	F*	Modify Interchange Install Signals	0.60	A	0.63	B
442	California Ave./ Stanley Blvd.	0.93	E	0.87	D	EB/WB 2 thru lanes.	0.70	B	0.69	B

* In general, V/C ratios cannot be greater than 1.00, unless the lane capacity assumptions are too low. Also, if future demand projections are considered for analytical purposes, a ratio greater than 1.00 might be obtained, indicating that the projected demand would exceed the capacity.

New interchanges at I-580/Hacienda Drive, I-680 at Stoneridge Drive, and I-680 at West Las Positas Boulevard were assumed in this analysis.

TABLE III-7

FUTURE ROADWAY LANE CONFIGURATION BY ROADWAY SEGMENT

<u>Street</u>	<u>From</u>	<u>To</u>	<u>Cross Section</u>
Bernal Avenue	Foothill Rd.	I-680	4 Divided
	I-680	Valley Ave.	6 Divided
	Valley Ave.	Lund Ranch Rd.	4 Divided
	Lund Ranch Rd.	Angela St.	2 Undivided
	Angela St.	Stanley Blvd.	4 Divided
Busch Rd.	El Charro Rd.	Valley Ave.	4 Divided
Canyon Way	Foothill Rd.	Stoneridge Mall Rd.	4 Divided
Chabot Dr.	Owens Dr.	Gibraltar Dr.	4 Divided
	Gibraltar Dr.	Inglewood Dr.	3 W/2WLTL
Coronado Ln.	Hopyard Rd.	W. Las Positas Blvd.	3 W/2WLTL
Del Valle Pkwy.	Hopyard Rd.	Main St.	2 Divided
	Main St.	First St.	3 W/2WLTL
	First St.	Bernal Ave.	4 Divided
Deodar Wy.	Foothill Rd.	Stoneridge Mall Rd.	4 Divided
Dublin Canyon Rd.	Foothill Rd.	1,500' w/o Foothill	4 Divided
El Charro Rd.	I-580	Stoneridge Dr.	6 Divided
	Stoneridge Dr.	Busch Rd.	4 Divided
Foothill Rd.	I-580	Stoneridge Dr.	6 Divided
	Stoneridge Dr.	Muirwood Dr. S.	4 Divided
	Muirwood Dr. S.	Castlewood Dr.	3 W/2WLTL
Gibraltar Dr. N.	Hopyard Rd.	Stoneridge Dr.	4 Divided
Gibraltar Dr. S.	Willow Rd.	Stoneridge Dr.	4 Divided
Hacienda Dr.	I-580	W. Las Positas Blvd.	6 Divided
Hopyard Rd.	I-580	Valley Ave.	6 Divided
	Valley Ave.	Division St.	4 Divided
Inglewood Dr.	Hopyard Rd.	Willow Rd.	3 W/2WLTL
Laurel Creek Way	Foothill Rd.	Stoneridge Mall Rd.	4 Divided
Old Santa Rita Rd.	Santa Rita Rd.	500' n/o Santa Rita Rd.	4 Divided
Owens Dr.	Johnson Dr.	Hopyard Rd.	4 Divided
	Hopyard Rd.	W. Las Positas Blvd.	6 Divided
Rosewood Dr.	Owens Dr.	Santa Rita Rd.	6 Divided
Santa Rita Rd.	I-580	Valley Ave.	6 Divided
	Valley Ave.	Main St.	4 Divided
Springdale Ave.	Stoneridge Mall Rd.	Stoneridge Dr.	4 Divided
Stanley Blvd.	First St.	Planning Boundary	4 Divided
Stoneridge Dr.	Foothill Rd.	Santa Rita Rd.	6 Divided
Stoneridge Mall Rd.	Stoneridge Mall Rd.	Stoneridge Mall Rd.	5 W/2WLTL
	Stoneridge Mall Rd.	Stoneridge Dr.	4 Divided
Sunol Blvd.	First St.	I-680	6 Divided
	I-680	Castlewood Dr.	4 Divided
Vallecitos Rd.	I-680	Stanley Blvd.	4 Divided
	Stanley Blvd.	I-580	6 Divided
Valley Ave.	Bernal Ave.	Stanley Blvd.	4 Divided
Vineyard Ave.	Bernal Ave.	4,000' e/o Bernal	4 Divided
Willow Rd.	Owens Dr.	W. Las Positas Blvd.	4 Divided
W. Las Positas Blvd.	Foothill Rd.	Hopyard Rd.	4 Divided
	Hopyard Rd.	Santa Rita Rd.	6 Divided
	Santa Rita Rd.	Planning Boundary	4 Divided

Notes

1. Street sections not listed are two lanes undivided
2. Distances are approximate.
3. 3 W/2WLTL = three lanes, one of which is a two-way left-turn lane.

TABLE III-8

CURRENT DAILY RIDERSHIP OF TRI-VALLEY TRANSIT SYSTEMS

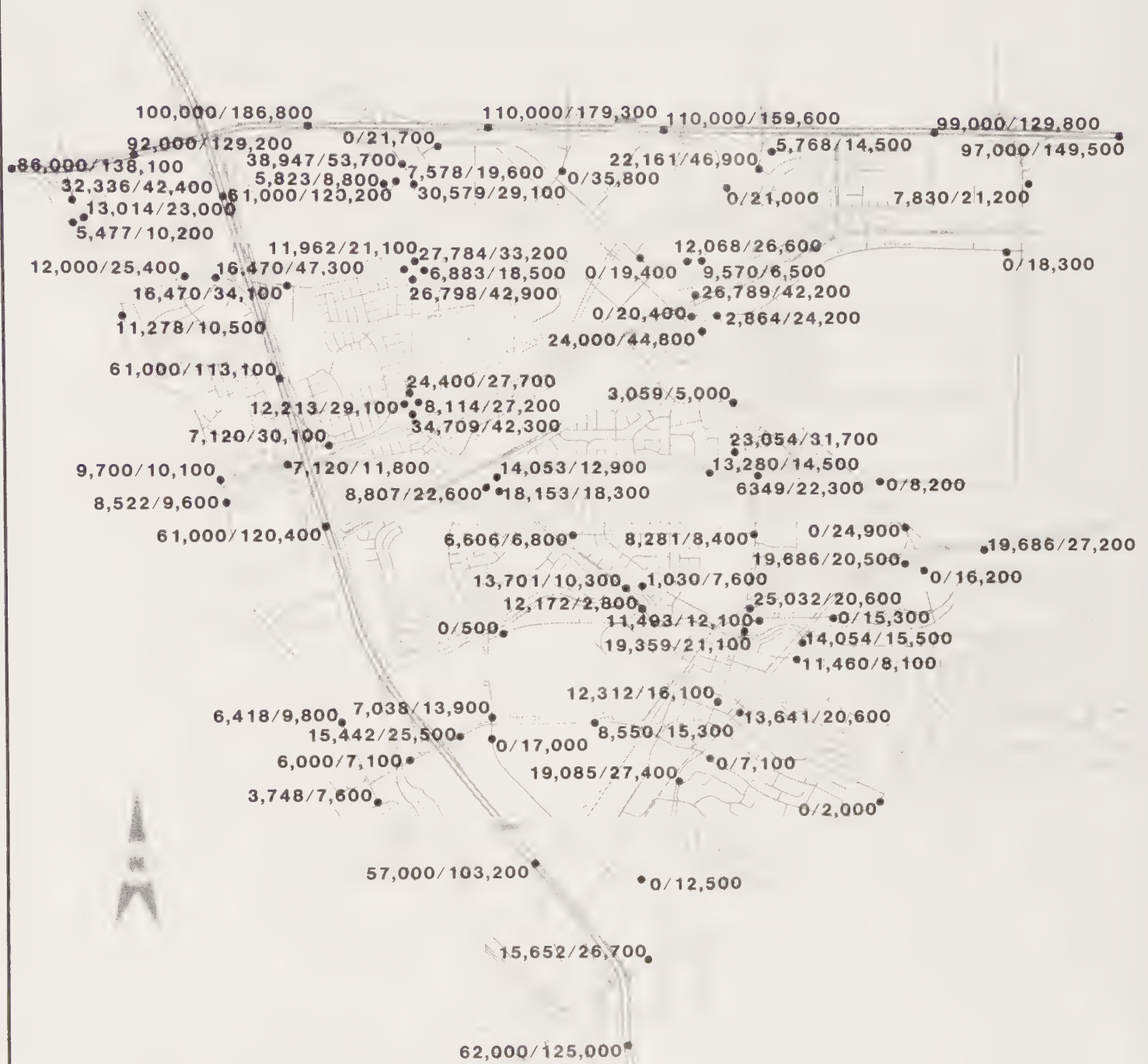
System	Line	Average Weekday Ridership	Average Monthly Ridership
BART/AC Transit	U	1,450	31,900
	UL	550	12,100
	UP	130	2,860
	D	1,800	39,600
Hacienda Business Park Shuttle	From BART	53	1,067
	To BART	56	1,109
	Stoneridge Mall	30	360
	Downtown Pleasanton	19	152
	Internal	8	164
RIDEO		840	27,995

Source: Hacienda Business Park Owner's Association (September 1985)
Conversation with BART in September 1985



CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
EXISTING STREET NETWORK	
PREPARED BY 	FIGURE III - 1





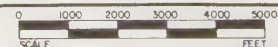
CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
EXISTING AND FUTURE ADT'S	
PREPARED BY 	FIGURE III-3



CITY OF PLEASANTON

GENERAL PLAN UPDATE

STUDY INTERSECTIONS

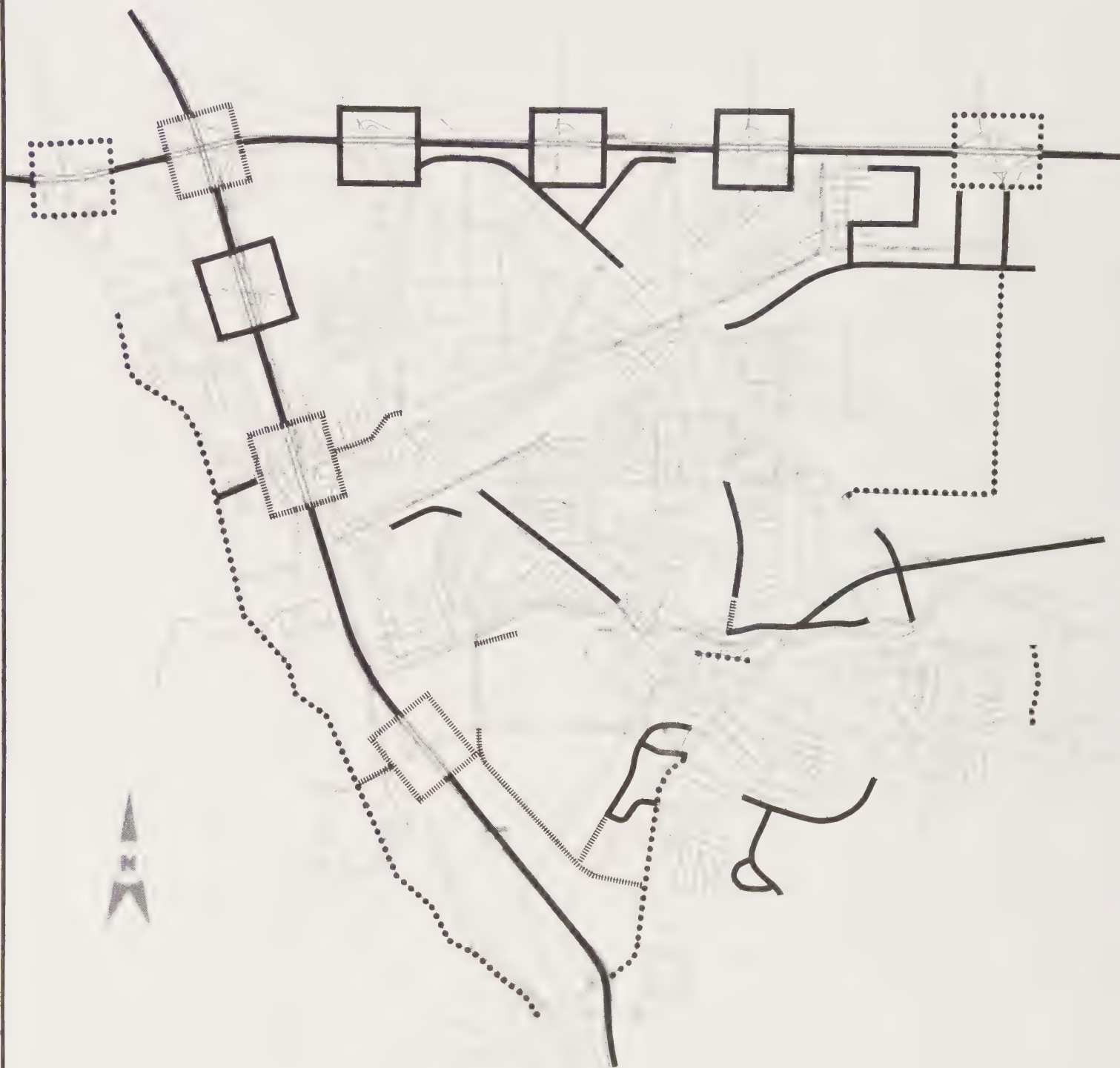


PREPARED BY



FIGURE III-4

A1309



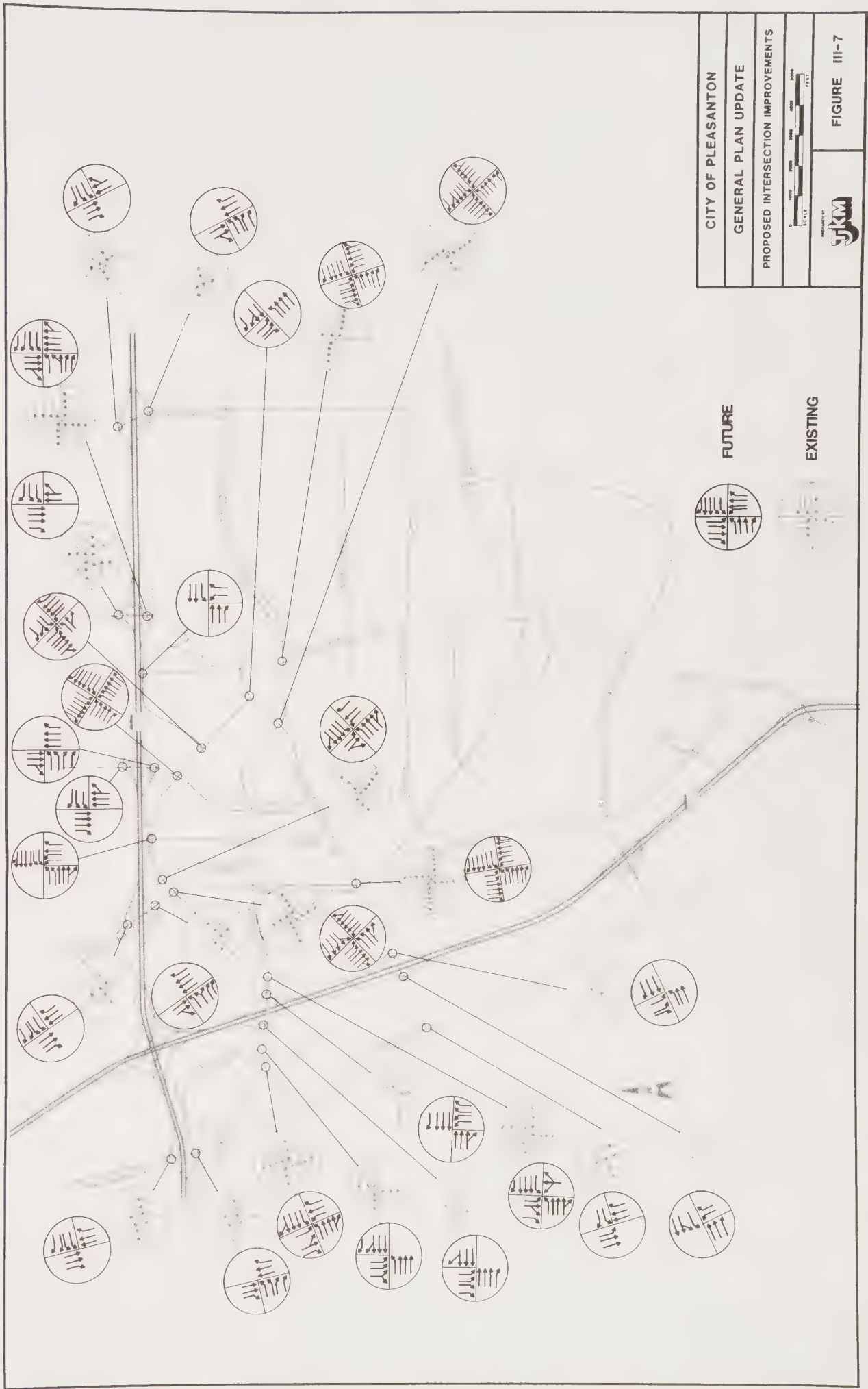
- 1986-1990
- 1990-1995
- ||||| 1995-2000

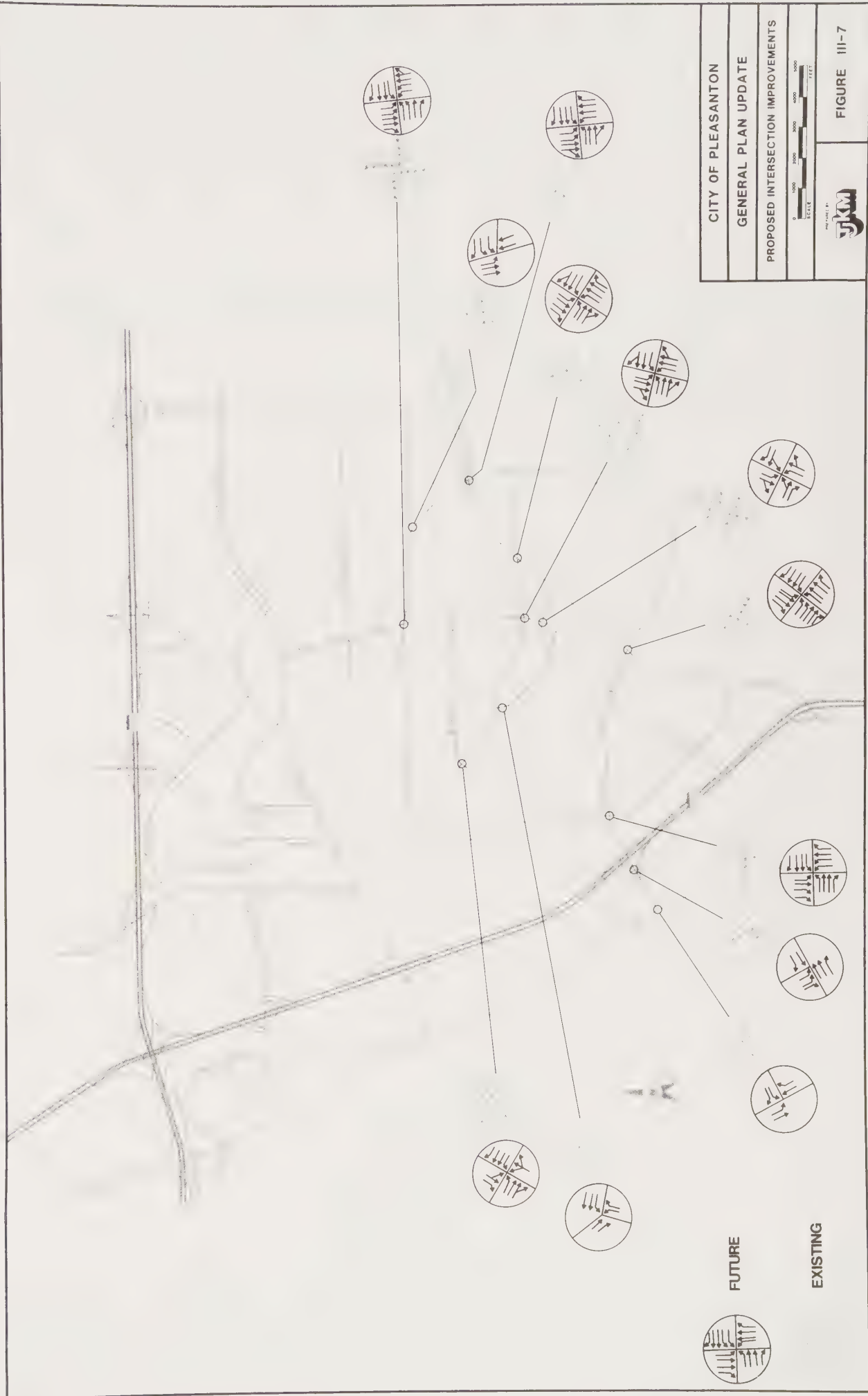
CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
Schedule Of Roadway Improvements	
PREPARED BY 	FIGURE III - 5



- Existing Signal
- Existing Signal and Future Monitoring Location
- Future Signal
- Future Signal and Monitoring Location

CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
EXISTING AND FUTURE TRAFFIC SIGNAL LOCATIONS	
PREPARED BY 	FIGURE III-6





City of Pleasanton
 01/14/00



LEGEND	
	Railroad Tracks
	City Limit
	Streets and Highways
	Transportation Corridor

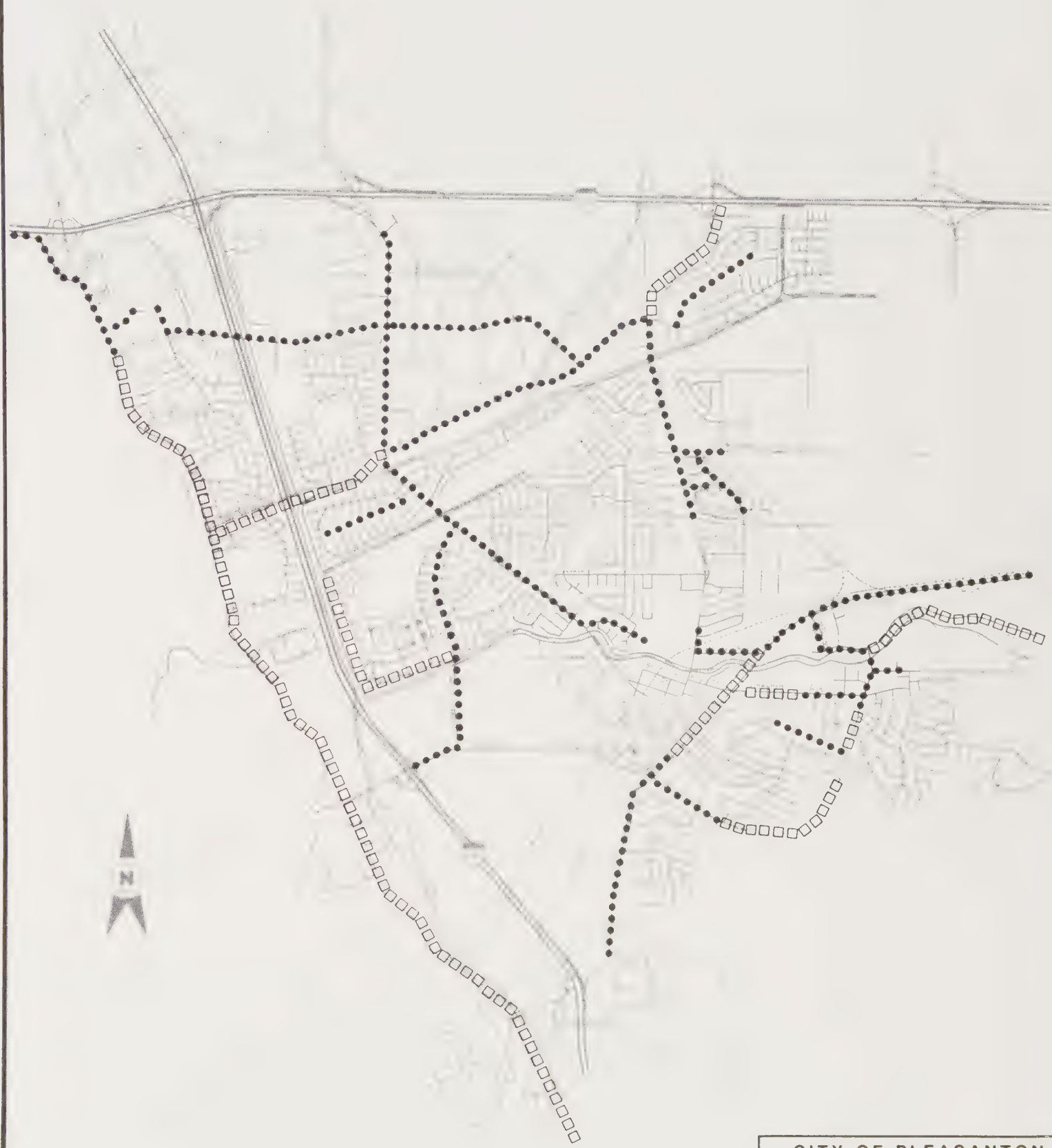
CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
FUTURE ROADWAY NETWORK	
PREPARED BY 	FIGURE III - 8

TRANSIT STATIONS



- LOCAL BUS
- EXPRESS BUS
- PASSENGER RAIL

CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
PROPOSED TRANSIT SYSTEM	
PREPARED BY 	FIGURE III - 9



□□□□□□□□ **PROPOSED**
 **EXISTING**

CITY OF PLEASANTON	
GENERAL PLAN UPDATE	
EXISTING BICYCLE NETWORK	
PREPARED BY 	FIGURE III -10

IV. HOUSING ELEMENT

PURPOSE OF THE HOUSING ELEMENT

The Housing Element is intended to help meet the State goal of attaining **decent housing and a suitable living environment for every California family**. In order to meet this goal, State law (1) requires each City's Housing Element to include an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives and scheduled programs for the preservation, improvement and development of housing. The Housing Element also shall identify adequate sites for housing of all types and make adequate provision for the existing and projected needs of all economic segments of the community.

COMPONENTS OF HOUSING SUPPLY AND DEMAND

Housing Stock

Pleasanton has grown from a small agricultural town in the mid-1800's to an upper middle class bedroom community in the mid-1900's to its current status as a rapidly growing suburban employment center. The City's existing housing stock reflects this varied history in terms of its mix of types, tenure, age and condition.

Amount

As of January 1, 1986 Pleasanton contained **15,299 housing units** within the incorporated City limits and an additional 500 units in unincorporated places within the Planning Area. Due to the construction of more than thirteen hundred units during 1985, the City had a stock of 499 unoccupied units, resulting in a **vacancy rate of 3.26%**. The remaining 14,800 occupied units had an average of **3.059 persons per unit** resulting in a population of **45,371 persons** living within the City limits. An additional 1,500 persons lived in unincorporated places within the Planning Area.

In the future, assuming the average Growth Management allocation of **650 units per year** is built, Pleasanton could add approximately 3,250 units over the next five years resulting in a population of about 51,700 by the year 1990, and 74,000 at buildout which can be expected about the year 2004. This rate would be somewhat greater than the Association of Bay Area Governments' (ABAG) projections (2) for Pleasanton which average about 600 units per year over the next 20 years resulting in a population of 47,800 by the year 1990 and 72,700 by the year 2005. ABAG's projections include extensive documentation of fertility and survival rates, net migration and other demographic components of future population growth. Pleasanton's actual growth will depend on a number of factors, such as interest rates

and employment growth, but will likely be somewhere between the two growth rates, provided that infrastructure constraints, especially sewage capacity, can be overcome. A comparison of residential growth projections are shown in Figure II-6 in the Land Use Element.

At buildout of the General Plan, the Pleasanton Planning Area is projected to contain about 26,900 housing units representing a population of about 74,000 persons. This assumes that all residential land within the 27,000 acre existing Planning Area is built at average densities (see Table II-4 in the Land Use Element). Construction of housing at greater than these average densities would increase this holding capacity as would the redesignation of additional land to residential uses.

In order to provide for the possibility of additional housing opportunities within the Expanded Planning Area, the General Plan calls for a maximum holding capacity of 4,000 additional units within this area, subject to a detailed study of the area. Future development within the Expanded Planning Area could generate a maximum of 11,000 additional persons, although this is not included in the holding capacity of this General Plan.

Rate of Growth

The growth of Pleasanton's housing stock has fluctuated greatly over the course of the City's development, as shown in Table IV-1. The construction of several thousand housing units during the early 1970's led to an overburdened sewage treatment system and a major slowdown of housing growth during the late 1970's. These wide fluctuations resulted in the City adopting a **Growth Management Program** in 1978 which controlled the City's residential growth rate according to sewage capacity and air quality constraints. Since the Growth Management Program was adopted, the City has made substantial progress in reducing these constraints and has modified its Growth Management procedures accordingly. The City has maintained its Growth Management Program in order to phase residential growth according to the availability of infrastructure, especially roadways and sewage capacity, and to manage the supply of buildable residential sites to meet continued future demand.

The City's Growth Management Program (GMP) (3) contains six components which regulate the rate and type of residential development within the City limits. The City regulates the number of housing units which can be approved in each year using a range of between 260 to 650 units annually. This range is more than sufficient to meet the City's share of **regional housing needs** as shown in Table IV-6. The yearly allocation made within that range is based on an assessment of infrastructure (e.g., sewer), services (e.g., police), employment growth and housing need as evaluated in a periodic Growth Management report (4).

Projects are granted growth management approval based on the project's compliance with City policies, such as the provision of public facilities. The City distributes Growth Management approvals over time using long-term agreements and small project allocations. Long-term agreements typically divide large projects into yearly phases of 30 to 150 units. Small projects of 50 units or less constitute the remainder of the allocations in each year.

Exemptions are granted above and beyond the annual growth allocations for certain projects (e.g., single family homes on an existing lot) and projects which meet certain policies (e.g., the provision of low income housing) up to a maximum of 1000 total units in any given year. The low income exemption has stimulated the production of low income housing in Pleasanton, as shown in Table IV-6.

Sufficient sewer capacity is set aside to accommodate the projected amount of residential development to the year 1991.

The location of residential developments is controlled, in part, by the designation as **urban reserve** of four parcels which are excluded from development until 1996 in order to focus housing construction in developing areas. These four parcels are the 152 acre parcel owned by TMI and three parcels, totaling 550 acres, owned by the City and County of San Francisco, all of which lie within the I-680 scenic corridor, north of Sunol Boulevard.

Type and Density

Pleasanton historically has been a City of predominantly single family homes in traditional subdivisions of 3 to 5 units per acre. About 80% of the existing housing stock is single family homes built at low or medium densities of 8 units per acre or less. The continuing influx of workers and the escalation of land values have generated a demand for smaller homes on smaller lots to meet market demand for housing that is affordable to middle income households. The mix of housing types and densities consequently will shift over the next decade to a greater proportion of attached **single family homes** (patio homes and townhouses) and **multiple family units** (condominiums and apartments) at somewhat higher densities. Table IV-2 illustrates the range of housing types and densities found in representative housing projects in Pleasanton.

In the future, Pleasanton can be expected to increase its share of multiple family housing. Projections for 1986 through 1988 indicate that if all approved projects were built, 48% of the new units would be detached single family and 52% would be attached single family or multiple family. At buildout of the General Plan, 25% of the total housing stock is projected to be multiple family units, in keeping with policies established in this Housing Element.

Tenure

Housing tenure refers to the status of the occupant, whether he or she owns or rents the unit. Housing tenure tends to parallel the type of housing unit - multiple family units tend to be renter occupied and single family units tend to be owner occupied, although there are exceptions. In 1980, the latest date for which accurate data is available, **owner occupied units** comprised 77% of the housing stock while rental units comprised the remaining 23%. The mix of renter and owner occupied units is difficult to estimate exactly because of single family homes which are being rented and multiple family homes such as condominiums which are owner occupied. In 1980, for example, 11% of single family homes which are traditionally owner occupied were being rented, while 30% of multiple family units, including mobile homes, were owner occupied.

In the future, two trends are emerging which may indicate the future of rental and owner occupied housing in Pleasanton. The City has recently approved 1,032 **apartment units** which should be constructed between 1986 and 1989. Apartment approvals constitute 34% of approved units during that period (4). An additional 1,007 apartment units have been proposed, but not yet approved, bringing the potential addition to the City's apartment stock to over 2,000. Developers are responding to the market demand generated by office workers seeking rental units in Pleasanton and creating a short-term supply of rental units. The City has adopted a **condominium conversion ordinance** which helps protect tenants in apartments proposed for conversion (5).

Age, Condition, and Overcrowding

Pleasanton is fortunate to have a relatively **new housing stock**. Also, there are several hundred older buildings in the downtown area which have been restored or well maintained. Only 660 units, or 4% of the existing housing stock, were built prior to 1950. An additional 28% of the existing stock was constructed between 1950 and 1970 while 68% has been built in the past fifteen years (Table IV-3).

The housing stock is in excellent condition as might be expected with such newly built housing. As of 1980, only 41 units or .4% of the total housing stock lacked complete individual plumbing facilities and only 56 units lacked complete kitchen facilities. No units lacked adequate heating equipment. With an average of 6.43 rooms per unit, very few examples of overcrowding exist in Pleasanton. As of 1980, only 105 units or less than 1% of the total housing stock contained more than one resident per room.

In the short-term, housing condition is unlikely to change significantly. However, in the next 15 or 20 years, homes that were constructed in the 1950's will begin to experience structural problems unless they are well maintained and, in some cases, rehabilitated. The 660 units built prior to 1950 will

require increasing maintenance to avoid demolition in the long-term. Most of the units with structural problems are located in the **downtown area** which is targeted as a specific plan area to address these and other issues.

Population

Population growth closely parallels the development of housing. In Pleasanton, population more than quadrupled during the 1960's and doubled during the 1970's. Due to residential growth management and other factors, population growth has slowed during the first half of the 1980's to roughly 3% annually. During 1985, however, population growth increased to about 11%, reflecting lower interest rates and an unmet demand for housing accumulated from previous years. As of January 1, 1986 the population within the City limits of Pleasanton was 45,371 with an additional 1,500 persons residing in unincorporated places within the Planning Area.

Ethnic and Social Diversity

Pleasanton's population is less racially mixed than other cities in Alameda County. As of 1980, Pleasanton's population was 95% White, 1% Black, 2% Asian, 1% Spanish and 1% Other. The City also has fewer households with "**special needs**" such as handicapped, female headed and farm worker households than other cities in California, as shown in Table IV-10. However, Pleasanton is home to about 1,400 children living with single parents and about 2,700 senior citizens over 65, some of whom have special housing needs.

Age

Pleasanton has a **younger population** than California as a whole with a median age of 28 years as of 1980. The median age has gradually increased from 26 years in 1970 and indicates the gradual aging of the population. As of 1980, about 6% of the population was pre-school age, 29% were school aged children, 6% college age, 19% young adults, 30% middle age, and 4% were senior citizens, as shown in Figure IV-1.

Household Size

Pleasanton's family oriented, child raising population is illustrated by the City's larger than average household size. Large families require larger homes and the housing stock in Pleasanton serves large families well. In 1980, families comprised 83% of households in Pleasanton compared with 69% in California as a whole. In 1986, Pleasanton averaged 3.059 persons per household compared with about 2.55 for Alameda County as a whole. **Household size** varies according to the type of unit. In 1980, for example, single family households averaged 3.35 persons per household while multiple family units averaged only 2.01. Household size has been decreasing in recent years due to

the postponement of marriage among baby boom individuals, fewer children per household, high divorce rates and increasing numbers of single elderly people. Average household size in Pleasanton is projected to gradually decrease to 2.87 persons per household by the year 2005, as the existing childhood population matures and the baby boom generation ages past its child rearing years (Table IV-4).

In the future, two trends will gradually change the make-up of Pleasanton's population. Increasing numbers of young adults and middle aged workers will locate to the City as **job opportunities** increase. This will tend to increase the number of singles and families with children as Pleasanton attracts resident workers from a variety of socio-economic backgrounds. This trend will have an effect on social and commercial services, school and community facility needs. In addition, the existing population in Pleasanton will gradually age and require greater levels of service related to **senior citizens** than are needed today.

Employment

Another factor which contributes significantly to the demand for housing in Pleasanton is the amount and type of employment located within the Planning Area and the Tri-Valley. Pleasanton's transformation from a bedroom community to a regional **job center** is resulting in thousands of workers who will be seeking housing within commute distance to Pleasanton. A certain percentage of workers employed in Pleasanton also will seek housing in Pleasanton and a certain percentage of workers employed outside of Pleasanton will seek housing here. The key to accommodating employment generated housing need is to recognize that these various types of **commute behavior** occur within an area much larger than Pleasanton itself and provide housing opportunities within a reasonable commute distance to local jobs.

Figure II-7 in the Land Use Element illustrates two **projections of employment growth** in Pleasanton and the Tri-Valley. The Association of Bay Area Governments (ABAG) makes projections based on Pleasanton's share of regional economic growth. Their projections take into account the square footage the City has approved for employment generating uses, but do not assume that all of this space will be absorbed by the market. Gruen Gruen + Associates also has projected employment growth but uses a different method which assumes future tenants will occupy industrial, commercial and office space according to average employment densities. Although the two projections assume substantially different levels of existing employment, they project similar rates of employment increases averaged over the next twenty years - between 1,860 jobs (ABAG) and 1,925 jobs (Gruen) per year.

At buildout, the Pleasanton Planning Area could accommodate about 79,000 jobs assuming development of all land designated as industrial, commercial or office at the average densities shown in Tables II-3 and II-4 in the Land Use Element.

Commute Patterns

In 1980, 24% of the 17,000 **employed residents** of Pleasanton worked in the City, an additional 23% held jobs within the Tri-Valley and the remaining 53% worked outside the Tri-Valley, mostly in the East Bay and San Francisco (6). Of the 8,700 jobs located in Pleasanton in 1980, about 47% were held by Pleasanton residents and about 53% were held by people who commuted into the City from other locations. The net result of this commuting pattern in 1980, was about 13,000 residents commuting out of Pleasanton and about 4,600 workers commuting into Pleasanton - a net out-commute. This trend is beginning to change with the addition of thousands of office jobs locating in Pleasanton.

A recent survey of **employees** working in Pleasanton (7) conducted by the City in conjunction with its TSM Ordinance indicates the changing patterns of commuting into and out of Pleasanton. The survey of major employers indicated that 71% of people working in Pleasanton commuted in from outside the City compared with 53% in 1980. This increase in in-commuters will continue to increase demand for housing in the Tri-Valley Area and in Pleasanton.

The number of jobs recently created in Pleasanton has outpaced the formation of households and resident workers by more than 300%. Between 1980 and 1985, for example, Pleasanton added 11,000 jobs and only 3,000 resident workers (Table IV-1 and Figure II-7).

The relationship of **jobs, housing and commuting** is discussed in greater detail in the Land Use Element.

Income

Because of the rapid rate with which new employees are relocating to Pleasanton, it is difficult to obtain an accurate estimate of job classification and salary levels of people working in Pleasanton businesses.

As of the 1980 census, Pleasanton's median income for households was \$28,718 or 44% greater than the Bay Area median income of \$20,018. Table IV-5 summarizes the 1980 income distribution of Pleasanton according to various income groups.

In the future, household incomes in Pleasanton are projected to increase in relative proportion to those elsewhere in Alameda County. ABAG (2) projects that mean household incomes in Pleasanton will reach \$38,900 (in 1980 dollars) compared with \$30,000 for Alameda County by the year 2005. Therefore,

Pleasanton residents will continue to enjoy a greater income than most cities in Alameda County.

HOUSING NEEDS

Regional Housing Needs

California housing law requires every City to analyze population and employment trends and quantify housing needs for all income levels including the City's share of regional housing. The Association of Bay Area Governments (ABAG) has established Pleasanton's contribution to **regional housing needs** as 4,274 units. ABAG has determined this need according to various income levels over the period 1980-1990. Pleasanton's 4,274 units represent roughly the number of housing units needed to meet ABAG's population projections for Pleasanton to the year 1990. Although the City is not required to build these units, the State requires a good faith effort to provide sufficient opportunities for meeting these housing needs. Since 1980, Pleasanton has made substantial progress toward meeting its share of regional housing as shown in Table IV-6.

As shown in Table IV-6, the City already has exceeded its goal for the provision of its share of regional needs for above moderate and moderate income housing and has approved more than half of its allocation of low income housing units. There have been no units approved for very low income housing because of the difficulty of building housing which sells for less than \$45,000 or rents for less than \$400 per month, as is true throughout California.

In an attempt to address very low income housing needs, the City of Pleasanton, in cooperation with a local non-profit housing corporation, is developing a 220-unit housing project for the elderly, one half of the units of which will be targeted for low and very low income households. The City is donating the land for the project, has invested \$65,000 in predevelopment costs from the City's low income housing fund, will issue tax exempt bonds, and probably will lease the project to a non-profit housing corporation to facilitate provision of low and very low income housing. The City has targeted numerous programs to encourage the production of moderate, low, and very low income housing as indicated in the Goals, Policies and Programs section of this Element.

Housing Affordability

Housing affordability refers to the financial ability of a household to rent or buy a housing unit. Government agencies, lenders and landlords generally consider a household eligible to rent or buy if monthly payments do not exceed 30% of total household income. Given this guideline, the monthly rent or mortgage rate which can be afforded is easy to calculate although ownership costs will vary with interest rates, down payments and

the type of financing instrument. Using recent rates, the amount of income needed to rent or buy can be calculated for various income groups.

The California Department of Housing and Community Development (HCD) defines household income groups and the U.S. Department of Housing and Urban Development (HUD) calculates income relative to the area median for these groups. As of 1985, the four economic groups earned incomes within the ranges shown in Table IV-7.

Using these definitions, Pleasanton's population in 1980 consisted of 63% above moderate, 17% moderate, 9% low and 11% very low income households. The 1980 census determined what percent of each income group was paying more than 30% of total household income for housing costs. City-wide, 24% of owners and 38% of renters were considered to be **overpaying** for housing, as shown in Table IV-8.

Table IV-8 illustrates that a majority of lower income households and a large percentage of moderate income households were overpaying for housing costs. Most cities in California have similar imbalances between housing costs and household income.

A recent survey of housing prices in Pleasanton revealed that the **median price** for a used single family home in Pleasanton in 1984 was \$159,500, for a condominium or townhouse the median was \$106,150, and for mobile homes, the median was \$67,000 (8). For all types of housing, Pleasanton's median of \$150,000 was 15% greater than for the \$130,400 in the Bay Area.

No thorough study of **rents** in Pleasanton has been conducted recently, although an informal survey suggests that monthly rental rates for a two bedroom apartment range from \$500 to \$900 per month with new units commanding \$700 to \$900. These high rental rates indicate the difficulty which many households have in finding affordable rental housing. Another indication of the need for affordable rentals in Pleasanton is the waiting list of some 450 very low income households for the 150 units of subsidized housing at the Arroyo Vista housing project in nearby Dublin.

Many factors determine the price of housing which a household can afford including interest rates, mortgage instruments, down payment and personal assets above and beyond income. Table IV-9 calculates the range of monthly rents and purchase prices of housing which would be affordable to the four income groups in Pleasanton using standard assumptions. Obviously, these conditions vary and there are numerous exceptions depending on individual financial situations. However, the information suggests that there is a significant gap between households' ability to pay and actual housing costs in Pleasanton, as there is throughout California. The problem of affordability affects a substantial number of Pleasanton households including very low, low and moderate income groups.

In the future, the **affordability gap** will affect increasing numbers of first time home buyers, workers employed in Pleasanton trying to find an affordable home within commuting distance, and elderly individuals seeking affordable rental housing. The Pleasanton Plan addresses this problem by designating more land for residential use, increasing densities in many areas, and targeting numerous programs to encourage production of affordable housing.

Special Housing Needs

Special housing needs include those normally unmet by market rate housing including farm workers, the disabled, female headed households, and elderly households. Pleasanton contains fewer households with special housing needs than most cities in the State. The greatest needs in Pleasanton are housing for large families, the elderly and female headed households. Because of Pleasanton's higher than average income, many of the households shown in Table IV-10 do not have the same housing problems as lower income households. As discussed previously, the City has made substantial progress in addressing lower income housing needs which should help the special needs of disabled, elderly, large family and female headed households. In addition, the City is helping to build a large housing project for the elderly, has approved an intermediate care/retirement hotel complex and provides numerous programs to assist other households with special needs.

Sites Available for the Production of Housing

The City of Pleasanton has inventoried all underdeveloped and **vacant parcels** within the entire 27,000 acre Planning Area, established a 100-member citizens' committee to redesignate or increase densities on potential residential parcels, and effectively increased the holding capacity of the existing Planning Area by about 3,400 housing units with the potential for adding 4,000 additional units in an Expanded Planning Area.

At buildout of all residential land, the General Plan provides for nearly double the number of housing units (26,400) as existed in 1985 (14,000). A detailed parcel by parcel listing of the parcels available for residential development together with an evaluation of development capacity and constraints is contained in a separate data base (9). A summary of vacant residential land is contained in Table IV-11.

Constraints to Housing Development

Constraints to the development of housing in Pleasanton vary from parcel to parcel, although some general constraints affect a majority of future developments. These constraints fall into four basic categories: infrastructure, land use controls, fees and improvement costs, and market constraints.

Infrastructure refers to the capital improvements required to service development such as sewer, water and storm drainage. In Pleasanton, the capacity of the local sewage treatment plant and export pipelines is the major constraint to housing development, as explained in the Public Facilities Element. Pleasanton recently has obtained voter approval and financing to support a short-term expansion of its sewage treatment plant to provide sufficient capacity to about the year 1991 and has structured its Growth Management Program accordingly. The City also is in the process of studying alternative methods for future treatment plant expansion for the long-term as well as for the export of treated sewage. Solutions for both capacity problems should be under way prior to existing capacities being reached.

The City exercises **land use controls** over residential development through its General Plan, zoning ordinance, building review and permit procedures, and Growth Management Program. The General Plan, primarily through the land use map, regulates the general use and density of future developments in Pleasanton. The Zoning Ordinance regulates specific site requirements such as building height and density. Pleasanton makes extensive use of Planned Unit Development (PUD) zoning to provide residential builders with substantial flexibility in planning their projects. The City's Building Department reviews all buildings for conformance to the Uniform Building Code and other codes to ensure the health and safety of its residents. Finally, the City allocates a range of between 260 and 1000 housing units to be built per year through the Growth Management Program based on housing need and the City's ability to provide infrastructure and City services, as called for in General Plan policies.

The City has designed its Growth Management Program (GMP) to encourage the provision of housing for all economic segments of the community. The success of this technique can be measured by the City's progress in meeting its share of regional housing needs. From 1980 to 1985, for example, the GMP resulted in over 30% of total units which were affordable to low and moderate income households (10). The rate of 260 to 1,000 units per year established by the GMP is lower than market demand because of infrastructure limitations, but allows for more units than specified in ABAG's residential housing need allocations.

Pleasanton requires payment of numerous **fees** as a condition of development approval. All fees are tied to the City's costs of providing necessary services, such as plan checking fees, or improvements, such as roadway widening. The City waives certain fees, such as the low income housing fee imposed by the Growth Management Program, to certain projects which fulfill City policy, such as the provision of low income housing. The City also exacts physical improvements from developers, such as streets, as allowed under municipal regulatory power and the Subdivision Map Act (11). City fees are reviewed and adjusted periodically while exactions are established on a case by case

basis depending on the on-site and off-site improvements required by individual projects.

Market constraints include the cost of land and improvements, construction costs, interest rates, profit, property taxes and the wide range of factors which determine consumer preferences in the housing market. Most of these factors are beyond the control of local governments, although occasionally the cost of land and interest rates can be reduced in order to encourage affordable housing production. An example of this is the City of Pleasanton's agreement to donate a portion of its current corporation yard to eliminate land costs; issue housing revenue bonds to reduce financing costs; and contribute to planning and design studies to reduce predevelopment costs on a ten acre parcel for 220 units of senior citizens housing. Other factors do not appear to pose much of a constraint to the production of housing in Pleasanton for the foreseeable future, as indicated by the large number of units recently approved for development over the next several years.

Given the opportunities and constraints to the production of housing discussed throughout this element, it is estimated that 3,250 new housing units could be constructed over the next five years. The distribution of these units according to type, density, price and tenure are guided by the housing policies described later in this element. A negligible number of units are estimated for demolition, rehabilitation or conservation during that period.

Opportunities for Energy Conservation in Residential Developments

In addition to providing opportunities for the development of housing, the City of Pleasanton also encourages **energy conservation** in residential projects. All residential projects are reviewed in terms of building orientation, street layout, lot design, landscaping and street tree configuration in order to maximize solar access and energy conservation. All residential structures must meet all requirements of the Uniform Building Code with respect to energy saving materials and designs. City policies, together with the General Plan Map, encourage the location of higher density residential projects within walking distance of transit stops, commercial centers and employment sites, thereby reducing consumption of gasoline.

Housing Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

IV. HOUSING GOALS, POLICIES AND PROGRAMS

Goal 1: To attain a variety of **housing types, densities, designs and prices** which meet the existing and projected needs of all economic segments of the community. (HE, Subgoal 1, p. 5; GME, Goal 5, p. 14; RRC, Goal 1, p. 14)

Type and Density

Policy 1: Ensure that at least 25% of the total housing stock at full development shall be **multiple family**, both owner and renter occupied. (GME, Policy 22, p. 14; HE, Policy 1, p. 5)

Program 1.1: Allocate more than 25% of each year's residential **development permits** to multiple family housing through the City's Growth Management Program (3) until such time that the City attains its 25% objective. (HE, Program 1, p. 6; RRC, Program 1, p. 14)

Responsible Agency: City Council
Time Period: Annually
Funding Service: Not Applicable

Policy 2: Maintain at least the amount of **High Density Residential acreage** currently designated on the General Plan Map. (HE, Policy 4, p. 10; RRC, Policy 4, p. 14)

Program 2.1: Replace each high density residential site which is redesignated with an equal or greater amount of **high density residential acreage**. (HE, Program 1, p. 11)

Responsible Agency: City Council
Time Period: As needed
Funding Service: Not Applicable

Policy 3: Stimulate development of **single family housing** units on lots of 20,000 square feet and greater. (HE, Policy 6, p. 13; RRC, Policy 2, p. 14)

Program 3.1: Exempt **minor subdivisions** of twelve lots or less from the provisions of the City's Growth Management Program. (HE, Program 1, p. 13)

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Not Applicable

Program 3.2: Zone sufficient land for R-1-20 and R-1-40 developments to increase the supply of **large lots** in peripheral areas.

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Source: Planning Dept. Budget

Policy 4: Encourage **mobile homes** and factory built housing on appropriately located sites. (HE, Policy 7, p. 14; RRC, Policy 3, p. 14; CGC Section 65852.2)

Program 4.1: Allow mobile home and **factory built housing** projects which have permanent foundations and meet all zoning and design review requirements on any parcel designated MDR or HDR. (HE, Program 1, p. 14)

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Not Applicable

Program 4.2: Recommend one or more sites within the City limits exclusively for use as a **mobile home park**.

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Service: Not Applicable

Tenure

Policy 5: Encourage at least 50% of **multiple family** housing units to be rental apartments at buildout. (HE, Policy 3, p. 8; RRC, Policy 6, p. 15)

Program 5.1: Exempt multiple family **rental housing** projects of twelve units or less from the requirements of the Growth Management Program. (HE, Program 1, p. 9; RRC, Program 4, p. 15)

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Not Applicable

Policy 6: Minimize displacement of tenants in rental apartments and mobile homes and encourage ownership of lower cost residential units by prior renters through the regulation of **condominium conversions**. (HE, Policy 5, p. 11; RRC, Policy 7, p. 15)

Program 6.1: Regulate condominium, townhouse and mobile home conversions and mitigate tenant displacement through the provisions of the City's **Condominium Conversion Ordinance** (5). (HE, Program 1, p. 12)

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Not Applicable

Program 6.2: Deny conversion of **apartment units** to condominiums if the percentage of multiple family units available for rent, City-wide, is below 50%.

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Not Applicable

Program 6.3: Require **moving assistance** and other means to minimize hardship of persons displaced by condominium conversions.

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Condominium Converters

Program 6.4: Require condominium converters to maintain rental units for households with **special needs**, such as the disabled.

Responsible Agency: City Council
Time Period: As Needed
Funding Source: Condominium Converters

Affordability

Policy 7: Encourage 15% of the housing stock at full development to be affordable to the needs of **lower income households**. (GME, Policy 23, p. 15; HE, Policy 8, 15; HE Policy 9, p. 22; RRC, Policy 8, p. 15)

Program 7.1: Seek **State and Federal assistance** for the development of housing to meet lower income housing needs. (HE, Program 1, p. 15; RRC Program 5, p. 15)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: State and Federal Funds

Program 7.2: Exempt both owner and renter occupied **subsidized housing** (see Definitions Section) projects meeting appropriate design and location criteria from the requirements of the Growth Management Program. (HE, Program 2, p. 18; RRC, Program 6, p. 16)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Not Applicable

Program 7.3: Encourage inclusion of **subsidized housing** units in market rate housing projects and encourage inclusion of market rate housing units in subsidized housing projects. (HE, Program 3, p. 18; RRC, Program 7, p. 16)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Program 7.4: Provide **incentives** such as reduced development fees, assistance in providing public improvements, priority in permit processing, increased density, altered site development standards, etc. to encourage the development of lower and moderate income housing. (HE Program 4, p. 19; Program 8, p. 21; RRC Program 8, p. 16)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Program 7.5: Use the Growth Management Program to generate **funds** for the provision of lower income housing. (HE, Program 5, p. 19; RRC Program 9, p. 16)

Responsible Agency: City Council
Time Period: Ongoing
Funding Source: Low Income Housing Fund

Program 7.6: Seek alternative, **non-traditional means** suited to the community to fill lower and moderate income housing needs, such as setting up locally assisted programs using funds other than those generated by the Growth Management Program. (HE Program 6, p. 20; RRC, Program 10, p. 16)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Program 7.7: Conduct a biennial **affordable housing competition** whereby selected residential projects of lower and moderate, for-sale and/or rental housing are granted Growth Management exemption, permit processing priority and/or fee waivers. Such a process should not require the City to award a winner for each competition. Conditions should be attached to units for which the City has contributed funds or waived fees, to retain the affordable price for a certain period of time. (RRC Program 11, p. 16)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Program 7.8: Grant priority in **permit processing** to low and moderate income projects, if required. (RRC, Program 12, p. 16)

Responsible Agency: Planning, Engineering,
and Building Depts.
Time Period: Ongoing
Funding Source: Planning, Engineering,
and Building
Department Budgets

Policy 8: Encourage a minimum of 20% of all new housing units to be affordable to **moderate income households**. (HE, Policy 10, p. 25; RRC, Policy 10, p. 17)

Program 8.1: Use the **Growth Management Program** to ensure that 20% or more of each year's allocation is available for moderate income housing units. (HE, Program 1, p. 25)

Responsible Agency: City Council
Time Period: Annually
Funding Source: Not Applicable

Policy 9: Strive toward meeting Pleasanton's share of **regional housing needs**. (CGC Section 65584)

Program 9.1: Use the low income exemption provision of the City's **Growth Management Program** to encourage the amount of low income housing necessary to meet local and regional housing needs.

Responsible Agency: City Council
Time Period: Annually
Funding Source: Not Applicable

Program 9.2: Attempt to produce 3,250 **housing units** between 1986 and 1991 according to the distribution of income levels specified in Table IV-6 and the tenure objectives established in Policy 5.

Responsible Agency: City Council
Time Period: 1986-1991
Funding Source: Not Applicable

Policy 10: Remove unnecessary **governmental constraints** to the provision of housing, public services and facilities. (OPR, p. 151.3)

Program 10.1: Establish a **housing specialist** position utilizing existing City staff to provide leadership and advocacy for, and to reduce unnecessary constraints to, the provision of affordable housing. (RRC Program 19, p. 18)

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Source: Planning Dept. Budget

Program 10.2: Continue to fund the **infrastructure improvements** contained in the Public Facilities Element to accommodate projected housing growth.

Responsible Agency: City Council
Time Period: Ongoing
Funding Source: Capital Improvement Program

Policy 11: Establish a **low income housing fund** to facilitate the production of low income housing. (RRC Policy 11, p. 17)

Program 11.1: Collect a **low-income housing fee** using the City's Growth Management Program.

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Program 11.2: Establish a program of assessing **Industrial, Commercial and Office** buildings to supplement the low income housing fund based on the percentage of industrial, commercial and office employees who qualify for low income housing and the price differential between market rate and low income housing. (RRC Program 16, p. 17)

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Source: Planning Dept. Budget

Program 11.3: Use the low income housing fund to help build low income housing on **City-owned land**. (RRC, Program 17, p. 17)

Responsible Agency: City Council
Time Period: 1991-1992
Funding Source: Low Income Housing Fund

Program 11.4: Use the **low income housing fund** to help finance affordable housing so as not to transfer additional costs to market rate income units. (RRC, Program 18, p. 17)

Responsible Agency: City Council
Time Period: Ongoing
Funding Source: Low Income Housing Fund

Growth Management

Goal 2: To manage **residential growth** in an orderly fashion.

Policy 12: Regulate the number of **housing units** approved for construction each year according to the availability of infrastructure, the City's ability to provide public services, housing need and employment growth.

Program 12.1: Use the City's **Growth Management Program** to limit residential growth to between 260 and 650 units per year and provide exemptions above and beyond this limit to encourage the construction of low income housing and other projects which fulfill City policies.

Responsible Agency: City Council
Time Period: Ongoing
Funding Source: Low Income Housing Fund

Goal 3: To **preserve and rehabilitate** the existing housing stock. (HE, Subgoal II, p. 27)

Age and Condition

Policy 13: Encourage the **maintenance** of safe, sound and well-kept housing, City-wide. (HE, Policy 4, p. 32)

Program 13.1: Enforce provision of the City **Zoning and Building Codes**.

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Policy 14: Encourage the preservation of historically and **architecturally significant** residential structures especially in the downtown area (12). (HE Policy 1, p. 27; HE Policy 3, p. 30; HE, Subgoal II, p. 27)

Program 14.1: Designate historically **significant structures** for preservation in the Downtown Specific Plan.

Responsible Agency: Planning Department
Time Period: 1986-1988
Funding Source: Planning Dept. Budget

Policy 15: Eliminate all **substandard housing** conditions within the community. (HE Policy 2, p. 28)

Program 15.1: Maintain building and housing **code enforcement** programs and monitor project covenants, conditions and restrictions (CC&Rs).

Responsible Agency: Planning and Building
Departments
Time Period: Ongoing
Funding Source: Planning and Building
Department Budgets

Relocation

Policy 16: Assist in the **relocation** of persons displaced by public activities. (OPR, p. 151.3)

Program 16.1: Support programs to assist in **relocation activities**, if needed.

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Goal 4: To provide adequate **locations** for housing of all types. (HE Subgoal III, p. 33)

Policy 17: Disperse **high density housing** throughout the community, especially in areas near public transit, major thoroughfares, shopping and employment centers. (HE Policy 1, p. 34; RRC p. 15)

Program 17.1: **Zone** high density housing near public transit, major thoroughfares, shopping and employment centers. (HE, Program 2, p. 35)

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Source: Planning Dept. Budget

Policy 18: Encourage **residential infill** in areas where public facilities are adequate to support such development. (HE Policy 2, p. 35)

Program 18.1: Zone **infill sites** at densities compatible with infrastructure capacity.

Responsible Agency: Planning Department
Time Period: 1986-1987
Funding Source: Planning Dept. Budget

Program 18.2: Allow "**granny flats**" in all R-1 zoning districts to increase the number of housing units while preserving the visual character within existing neighborhoods of single family detached homes. (RRC Program 3, p 15; CGC Section 65852.1.2)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Policy 19: Reserve suitable sites for **subsidized lower income** housing. (HE Policy 3, p. 36)

Program 19.1: Acquire and appropriately zone sites for lower income subsidized housing through a program of **land banking**. (HE, Program 1, p. 37; RRC, Program 14, p. 17)

Responsible Agency: City Council
Time Period: By 1991-1992
Funding Source: General Fund, Low Income Housing Fund

Program 19.2: Issue **tax exempt bonds** to finance the construction of lower income housing units, to purchase land for such a use, and to reduce mortgage rates. (RRC Program 15, p. 17)

Responsible Agency: City Council
Time Period: As Needed
Funding Source: General Fund

Goal 5: To **eliminate discrimination** in housing opportunities in Pleasanton.
(HE Subgoal IV, p. 37)

Policy 20: Prevent **discrimination** in City-owned and market rate housing.

Program 20.1: Support **State and Federal provisions** for enforcing anti-discrimination laws.

Responsible Agency: City Attorney's Dept.
Time Period: As Needed
Funding Source: General Fund

Policy 21: Provide for the **special housing needs** of large families, the elderly, handicapped and families with female heads of households. (OPR, p. 151.2)

Program 21.1: Provide **housing opportunities** for households with special needs such as studio and one-bedroom apartments for the elderly, three-bedroom apartments for large families, specially designed units for the handicapped, and affordable units for female heads of households.

Responsible Agency: Housing Authority
and City Council
Time Period: Ongoing
Funding Source: General Fund

Goal 6: To balance housing development with **environmental protection**.
(HE Goal V, p. 40)

Policy 22: Preserve and enhance **environmental quality** in conjunction with the development of housing. (HE Policy 1, p. 40)

Program 22.1: Continue **environmental impact review** procedures as required by the California Environmental Quality Act (CEQA).
(HE Program 3, p. 41)

Responsible Agency: Planning Department
Time Period: Ongoing
Funding Source: Planning Dept. Budget

Policy 23: Encourage **energy and water conservation** designs and features in residential developments. (HE Policy 2, p. 42)

Program 23.1: Consider building orientation, street layout, lot design, landscaping and street tree configuration in **subdivision review** for purposes of solar access and energy conservation. (HE Program 1, p. 42)

Responsible Agency: Planning, Building, and
Engineering Departments
Time Period: Ongoing
Funding Source: General Fund

Definitions: **Detached Single Family:** Detached single family homes have no common walls.
Attached Single Family: Attached single family homes have common walls from ground to ceiling.
Multiple Family: Multiple family homes have common walls from ground to roof.
Subsidized Housing: Housing units for which the purchase price, mortgage payment or contract rent is subsidized, or reduced from member rates, by a public or private agency.

Footnotes

- (1) California Government Code, Sections 65583 et seq
- (2) ABAG, Projections - 85, July 1985
- (3) City of Pleasanton, Growth Management Program - Ordinance No. 1023, as amended
- (4) City of Pleasanton, Growth Management Report, October 1985
- (5) City of Pleasanton, Condominium Conversion Ordinance No. 880, March 1979
- (6) U.S. Bureau, Census of Population and Housing, 1980
- (7) City of Pleasanton, Information Report 85:65 - Citywide Results of the 1985 Transportation Survey, December 1985
- (8) Thomas B. Cook, Housing in Pleasanton; An Analysis of Future Demand, Affordability and Government Action, December 1984
- (9) City of Pleasanton, Vacant Land Data Base, 1986
- (10) City of Pleasanton, State of the City Report, October 1985
- (11) California Government Code, Sections 66410 - 66499.58, The Subdivision Map Act, as amended
- (12) Pleasanton Historic Advisory Committee, Preserving Pleasanton's Heritage, June 1978

TABLE IV-1

POPULATION AND HOUSING UNITS 1970 - 1986									
	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Popula- tion	18,328	31,667	35,160	35,163	35,398	36,854	38,274	40,740	45,371
Persons/ Household	3.66	3.35	3.107	3.063	3.035	3.087	3.083	3.068	3.059
House- holds	5,004	9,400	11,317	11,448	11,632	11,905	12,383	13,249	14,800
Vacancy Rate	9.38	3.72	3.08	2.83	2.70	4.38	4.90	5.33	3.26
Total Housing Units	5,522	9,763	11,665	11,781	11,955	12,450	13,021	13,995	15,299
Single Family Units-Detached (1)	n/a	n/a	8,558	8,631	8,734	9,043	9,419	10,155	10,828
Single Family Units-Attached (2)	n/a	n/a	824	882	882	882	882	1,113	1,403
Single Family Units-Total (%)	4,837 (88%)	7,882 (80%)	9,382 (80%)	9,513 (80%)	9,616 (80%)	9,924 (80%)	10,301 (79%)	11,268 (80%)	12,231 (80%)
Multiple Family(3) Units	685	1,881	2,283	2,290	2,338	2,711	2,372	2,379	2,723
Mobile Homes	n/a	n/a	n/a	n/a	n/a	355	348	348	345
Multiple Family Units						2,526	2,720	2,727	3,068
Total(%)	(12%)	(20%)	(20%)	(20%)	(20%)	(20%)	(21%)	(20%)	(20%)

Sources: California Department of Finance, Summary Report:
Alameda County Controlled Population Estimates, 1980 - 1986
and Population Estimates for California Cities and Counties
1970 - 1980; U.S. Bureau of the Census, 1970 and 1980
Census of Population and Housing; California Department
of Finance, 1975 Special Census for Pleasanton. All
 estimates are as of January 1 of each year except 1970,
 1975 and 1980 which are as of April 1.

- (1) Detached Single Family: Detached single family homes have no common walls.
- (2) Attached Single Family: Attached single family homes have common walls from ground to ceiling.
- (3) Multiple Family: Multiple family homes have common walls from ground to roof.

TABLE IV-2

REPRESENTATIVE HOUSING TYPES AND DENSITIES

<u>Project</u>	<u>Location</u>	<u>Unit Type (1)</u>	<u>Density (2)</u>	<u>Lot Size</u>	<u>General Plan (Density)</u>
Foothill Place	Foothill/ Bernal	SFD	1	20,000 sf	Low
The Heights	East of First St.	SFD	4-5	6-10,000 sf	Medium
Highland Oaks	Muirwood Dr. North of Highland Oaks Dr.	SFD	4-5	6,500 sf	Medium
Northway Downs	Hopyard/ Secretariat	SFA	7	3800-4800 sf	High
Springwood Meadows	Valley/ Hansen	SFD	8	3060-3800 sf	High
Danbury Park	Valley/ Santa Rita	SFA	8	2850-3800 sf	Medium
Tiffany Lane	Del Valle Parkway	TH	9	2800 sf	Medium
Wellington	Hopyard/Black N/E Corner	TH	11	1070-1570 sf	High
Sunrise Villa II	Bernal/ Palomino	TH	16	n/a	High
Valley Plaza I&II	Santa Rita/ Valley	Apt.	18	n/a	High
Vintage Terrace	Norton	Apt.	29	n/a	High

(1) SFD=Single family detached; SFA=Single family attached;
TH=Townhouse; Apt.=Apartment

(2) Units per gross acre

Note: For a complete listing of recent housing projects, see
City of Pleasanton, Residential Projects Recently
Constructed, Approved and Proposed, March 1, 1986

TABLE IV-3
AGE OF THE HOUSING STOCK

<u>Year Built</u>	<u>No. of Units</u>	<u>Percent of Total</u>
1980 - 1985	3634	23.8
1975 - 1979	2092	13.7
1970 - 1974	4611	30.1
1960 - 1969	3713	24.3
1950 - 1959	589	3.8
1940 - 1949	212	1.4
Pre-1940	<u>448</u>	<u>2.9</u>
	15,299	100.0

Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, 1980; California Department of Finance, Summary Reports: Alameda County Controlled Population Estimates, 1980-1986

TABLE IV-4

HOUSEHOLD SIZE
(Persons Per Household)

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
Total Housing Units	3.08	3.07	3.01	2.96	2.89	2.87
Single Family	3.35	n/a	n/a	n/a	n/a	n/a
Multiple Family	2.01	n/a	n/a	n/a	n/a	n/a

Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, 1980; ABAG, Projections 85, July 1985

TABLE IV-5
HOUSEHOLD INCOME DISTRIBUTION
1980

	1980 Household Income (1)		1980 % of Pleasanton Households (2)
Above Moderate (>120% of Median Income)	>\$24,021	=	63%
Moderate (80 - 120% of Median Income)	\$16,014 - \$24,021	=	17%
Low (50 - 80% of Median Income)	\$10,009 - \$16,014	=	9%
Very Low (<50% of Median Income)	<\$10,009	=	11%
<hr/>			
Median Income	\$20,018		\$28,718

(1) Four Person Household in the Bay Area (1980 dollars)

(2) U.S. Bureau of the Census, 1980 Census of Population and Housing, 1980

TABLE IV-6

PROGRESS TOWARD MEETING REGIONAL HOUSING NEEDS

<u>Period</u>	<u>Above Mod</u>	<u>Moderate</u>	<u>Low</u>	<u>Very Low</u>	<u>Total</u>
1980-1990 (Need) (1)	1,923	855	598	898	4,274
1980-1985 (Approved) (2)	3,682 (exceeds goal)	1,349 (exceeds goal)	303	0	5,334

(1) ABAG, Housing Needs Determinations - San Francisco Bay Region, July 1983

(2) For a detailed listing of housing projects contributing to these needs, see City of Pleasanton, Residential Projects Approved Since 1980, November 1985

TABLE IV-7

HOUSEHOLD INCOME LEVELS - 1985

<u>Economic Group</u>	<u>% of Area Median</u>	<u>2 Person Household</u>	<u>4 Person Household</u>
Above Moderate	> 120%	> \$32,040	> \$40,080
Moderate	80-120%	\$21,360 - \$32,040	\$26,720 - \$40,080
Low	50-80%	\$13,350 - \$21,360	\$16,700 - \$26,720
Very Low	< 50%	< \$13,350	< \$16,700
Median	100%	\$26,700	\$33,400

Source: California Department of Housing and Community Development, U.S. Department of Housing and Urban Development, Median Family Income for Oakland Primary Metropolitan Statistical Area, November 1985

Note: The Oakland PMSA includes Alameda and Contra Costa Counties

TABLE IV-8
HOUSEHOLDS OVERPAYING FOR HOUSING - 1980

	<u>Percent of 1980 Households</u>	
	<u>Owners</u>	<u>Renters</u>
Above Moderate	18%	6%
Moderate	45%	25%
Low	63%	62%
Very Low	75%	80%
All Households	24%	38%

TABLE IV-9

AFFORDABLE HOUSING PRICES - 1985

Two Person Household		
	<u>Monthly Rent (1)</u>	<u>Purchase Price (2)</u>
Above Moderate	>\$801	>\$97,339
Moderate	\$534-\$801	\$64,893-\$97,339
Low	\$334-\$534	\$40,588-\$64,893
Very Low	<\$334	<\$40,588

Four Person Household		
	<u>Monthly Rent (1)</u>	<u>Purchase Price (2)</u>
Above Moderate	>\$1002	>\$121,765
Moderate	\$668-\$1002	\$81,177-\$121,765
Low	\$418-\$668	\$50,796-\$81,177
Very Low	<\$418	<\$50,796

(1) Rent equal to 30% of the monthly median income

(2) Prices based on a monthly mortgage payment equal to 30% of monthly income; assumes a 20% down payment on a 30-year fixed rate mortgage of 12%

TABLE IV-10
SPECIAL NEED HOUSEHOLDS

	<u>Pleasanton</u> (2)	<u>State</u> (2)
<u>Disability (Handicapped)</u>		
- Work Disability	4.3%	8.2%
- Public Transportation Disability	1.4%	3.5%
<u>Elderly</u> (households with one or more members 65 years or greater)	8.6%	20.2%
<u>Large Family</u> (5 or more in family)	15.7%	12.4%
<u>Female Headed Households</u>	8.6%	10.2%
<u>Farm Worker</u> (1)	---	1.8%

(1) There is virtually no farming activity within the City limits of Pleasanton

(2) Percentage of Households or Individuals

Source: State Census Data Center (based on 1980 Census)

TABLE IV-11

SUMMARY OF VACANT RESIDENTIAL LAND (1)

<u>Zone</u>	<u>Assessors #</u>	<u>Acres (2)</u>	<u>General Plan</u>	<u>Capacity (Units) (3)</u>
1	941-1700-5-4	48	LOW DENSITY	48
	941-1800-1-4	136	RURAL DENSITY	27
1	941-1600-5-6	24	LOW DENSITY	24
5	941-2000-1	43	LOW DENSITY	43
6	941-950-3-4	38	LOW DENSITY	38
7	941-3540-1	120	LOW DENSITY	120
7	941-3480-5-3	32	MEDIUM DENSITY	160
18	946-3570-4-5	30	HIGH DENSITY	450
	946-3630-1-13	180	MEDIUM DENSITY	900
	946-3701-2			
19	946-3630-1-16	12	HIGH DENSITY	180
		55	MEDIUM DENSITY	275
35	946-1151-9-2	21	SPECIFIC PLAN	105
39	946-2540-1-33	30	MEDIUM DENSITY	150
43	946-1735-8	23	LOW DENSITY	23
43	946-2300-2-3	525	RURAL DENSITY	105
43	946-2632-1	125	RURAL DENSITY	25
		55	LOW DENSITY	55
43	946-2681-1-1	100	RURAL DENSITY	20
43	946-2205-2-2	100	RURAL DENSITY	20
44	946-1250-5-2	81	MEDIUM DENSITY	405
		9	HIGH DENSITY	130
45	946-3901-7-2	78	SPECIFIC PLAN	388
	946-1144-1-14&16			
46	946-3901-3-6	90	SPECIFIC PLAN	450
49	946-1350-7-4	22	MEDIUM DENSITY	110
109	946-3102-6	52	LOW DENSITY	52
109	946-2632-2-1&2	25	LOW DENSITY	25
		22	RURAL DENSITY	4
109	946-2612-1	25	LOW DENSITY	25
109	946-2612-7-1	42	LOW DENSITY	42
111	946-4440-8	30	LOW DENSITY	30
112	941-2600-3-3	37	LOW DENSITY	37
112	941-2600-1-3	44	LOW DENSITY	44

(1) This summary lists vacant parcels of 20 acres and greater which are designated on the proposed General Plan Map for residential use and which have no PUD or development plan approval. A complete list of vacant residential parcels and associated development constraints is available at City Hall.

(2) That portion of the parcel suitable for residential development.

(3) Assumes the average General Plan densities described in Table II-4.

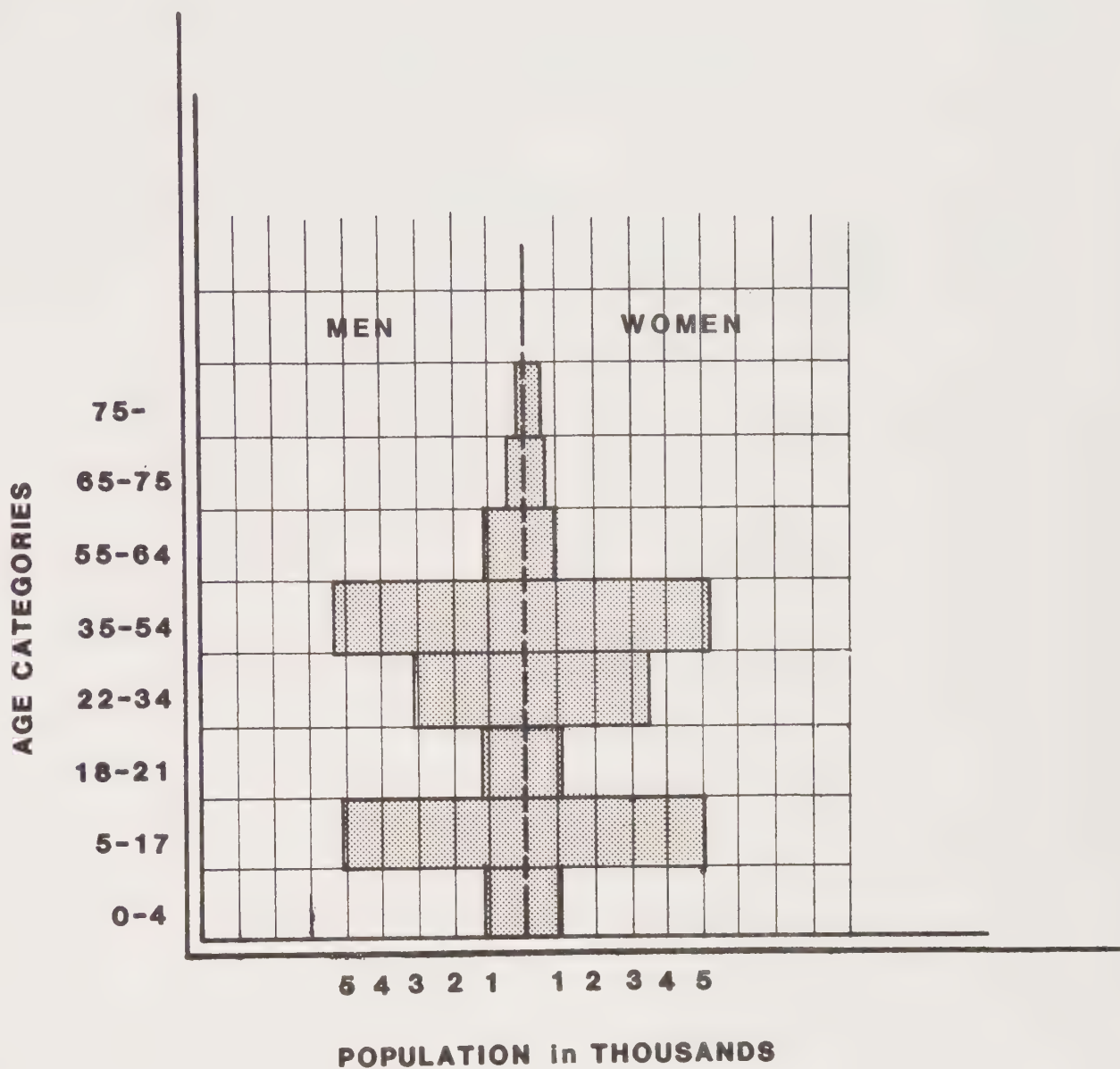


Figure IV - 1
AGE DISTRIBUTION
1980



V. PUBLIC SAFETY ELEMENT

PURPOSE OF THE PUBLIC SAFETY ELEMENT

The objective of the Public Safety Element is to reduce human injury and loss of life and minimize property damage, economic and social dislocation due to natural and man-made hazards.

GEOLOGIC HAZARDS (1)

The complex geologic history of the Pleasanton area has resulted in many types of potential geologic hazards which affect the location of land uses and the activities they foster. Geologic hazards generally are divided into two categories: **seismically induced hazards** which include surface rupture, ground shaking, ground failure and seismically induced landslides and water waves; and **other geologic hazards** not seismically induced such as slope instability, land subsidence, the shrink swell characteristics of certain expansive soil types, and non-seismically induced landslides.

Geologic Setting

The Pleasanton Planning Area is located within the Amador Valley which is part of the Coast Range geologic province of California. The **Coast Range** province is a large area of folded and faulted rocks situated along the western edge of the North American continent. The **Amador Valley** is a depression in this rock formation which joins the San Ramon Valley to the north and the Livermore Valley to the east. The geologic formations which have formed the topography surrounding Pleasanton are the result of a global pattern of moving **continental plates** which have shaped the earth's outer surface over hundreds of millions of years.

Pleasanton is located 24 miles from the **San Andreas fault** which forms the boundary between the oceanic crust of the Pacific Plate and the continental crust of the North American Plate. Throughout the past 30 million years, this area has been the locus of movement for these plates sliding past each other at an average rate of about two inches per year. The North American Plate, on which Pleasanton and most of California is located, is gradually moving to the southeast while the Pacific Plate is moving toward the northwest.

The **Calaveras fault**, which runs roughly parallel and to the west of Foothill Road, is a major branch of the San Andreas which also is experiencing significant movement. Other faults located within the Pleasanton Planning Area are shown in Figure V-1.

The history of earthquake activity along these faults together with the unstable nature of some of the surrounding soil types indicate the likelihood of a major earthquake with potentially devastating effects within the next 100 years.

Rock Formations

The oldest rocks found in the Planning Area are **sedimentary rocks** of the Panoche formation which are exposed along the upper slopes of Pleasanton Ridge and consist of marine shale, sandstone and conglomerate. Because of their location between the Hayward and Calaveras faults, these rocks have been intensely fractured and uplifted resulting in steep slopes with surfaced soils that are unstable and prone to landslides along much of the eastern face of Pleasanton Ridge. Erosion of these sedimentary rocks into the valley floor resulted in widespread deposits of **Livermore Gravels** to a depth of 4000 feet in some areas. Parts of these deposits remained near the surface at the eastern edge of the Planning Area while other parts were uplifted to the south to form the southeastern hills. Rapid uplift and stream erosion in these poorly consolidated sediments have resulted in numerous shallow landslides, some of which are shown in Figure V-2.

Unconsolidated Deposits

Older, very large **landslide deposits** consisting of fine and coarse grained sediments, rock fragments and large blocks of bedrock cover much of Pleasanton Ridge. The steep upper slopes and crest of the Ridge are underlain by sandstone conglomerate and shale bedrock while the lower slopes are largely covered by extensive landslide deposits. The unstable nature of these deposits explain this area's susceptibility to erosion and landsliding, especially following periods of wet weather.

In the southeastern part of the Planning Area, young valley sediments consisting of clay, silt, sand and gravel provide a thick layer 200 feet and greater which covers the Livermore Gravels in this area. These deposits have been mined to extract sand and gravel for over 40 years in the eastern Planning Area. Gravel pits have been excavated as deep as 140 feet below the surrounding ground surface resulting in very steep cliffs of 50 feet or more in mined areas. These gravel pits eventually will be reclaimed for a variety of uses including recreational lakes, similar to Shadow Cliffs, as discussed in the Conservation and Open Space Element.

Causes and Sources of Earthquakes in the Bay Area

An earthquake occurs when energy stored in the Earth's crust is suddenly released along an area of weakness between two large masses of rock. The line where this area of weakness intersects the Earth's surface is called a **fault trace**. The point on the fault plane where maximum energy is released is called the

earthquake focus and the point on the ground directly above this focus is called the epicenter.

The **San Andreas fault**, the principal boundary between the North American and Pacific plates, is curvilinear and irregular. As the two massive plates slip past each other, irregularities along the boundary and frictional forces tend to lock them together for a period of time. Continual forces acting on the two plates build up stress in the rocks along the surface where the two plates are temporarily joined. Inevitably, this junction is broken and the energy stored in the rocks is released as an earthquake.

Branch faults of the San Andreas fault system include the Hayward, Calaveras, Concord and Greenville faults and have the same north-northwest trend and exhibit similar horizontal displacement. The blocks of rock caught between these branch faults are fractured by faults called cross faults. These faults exhibit primarily vertical movement which create downwarps and uplifts. Cross faults can also be the source of earthquakes if they are presently active.

Earthquake Measurement

The severity of an earthquake is most commonly expressed in one of two ways. The magnitude, as expressed by the **Richter scale**, is a standardized measure of the amplitude of the seismic waves at a distance of 100 kilometers (63 miles) from the earthquake's epicenter. The intensity, as expressed by the **Modified Mercalli (MM) scale**, is a partly subjective measurement based on the effects of the earthquake on man-made structures, the local population and topography.

It is difficult to compare these two measures of an earthquake's strength because magnitude is a measure of energy released at the focus of an earthquake and intensity is a measure of earthquake shaking based on perception, damage and other factors related to local geology. Table V-1 gives a rough correlation between these two measures along with an indication of the type of damage that can be expected from various levels of earthquake activity.

Historical Seismicity

The most significant of historic earthquakes affecting the Pleasanton area are the San Francisco earthquake (April 18, 1906), Hayward (October 21, 1868), Danville (July 3, 1861) and the more recent Livermore Valley earthquake on January 24, 1980. These and other earthquakes are described in the following section on fault activity.

In addition to earthquake activity, **fault creep** (slow, continuous displacement along a fault not accompanied by noticeable earthquakes) is occurring along the Hayward and Concord faults; and segments of the Calaveras fault, south of Sunol; but not

along the seismically quiet segment of the Calaveras fault north of Sunol. The relationship between earthquakes and fault creep is not well understood by seismologists. Moderate to small earthquakes have occurred on both fault segments which currently exhibit creep and those which are not known to be creeping. Some geologists have suggested that the occurrence of fault creep and small to moderate earthquakes may not be acting as a safety valve to relieve strain on major faults in the region, but rather may reflect a buildup of regional strain prior to a great earthquake. Given this current state of knowledge, it should be assumed that a moderate to large earthquake can occur along any segment of an active regional fault, regardless of the historical record of seismicity or creep for that segment.

Regional Fault Activity

The California State Legislature passed the Alquist-Priolo Hazard Zones Act (SB 520) in 1972 following the 1971 San Fernando Valley earthquake which caused significant property damage and loss of life. The Alquist-Priolo Act requires the establishment of **"Special Studies Zones"** along known active faults and regulation by cities and counties of development within these zones. Structures for human occupancy generally are not allowed to be built across the mapped trace of an active fault or within an area 50 feet wide on either side of the fault trace. In addition, a zone one eighth of a mile on either side of the mapped trace requires a geologic investigation prior to construction within this zone. More specific and up-to-date information can be obtained from the California Division of Mines and Geology.

Information regarding the location, historic and estimated future activity of faults significant to the Pleasanton area is discussed in the following section. These include the San Andreas, Hayward, Calaveras, Concord and Greenville faults (Figure V-1). Information concerning maximum historic earthquakes, locally felt intensities, maximum credible earthquakes, and the faults' distance from Pleasanton are summarized in Table V-2.

San Andreas Fault

The San Andreas fault system traverses California for a distance of 750 miles from Mexico to Cape Mendocino. Total displacement along the fault system has been more than 200 miles. The San Andreas has generated two great earthquakes during California's recorded history - the 1857 Los Angeles earthquake and the 1906 San Francisco earthquake (8.3 on the Richter scale). An earthquake of the magnitude of the 1906 event is generally regarded as the **maximum credible earthquake** (MCE) in the Bay Area. If the epicenter of this MCE on the San Andreas fault were located due west of Pleasanton, strong shaking in the range of MM VII to MM VIII would be anticipated (Table V-2).

Hayward Fault

The **Hayward fault** extends about 45 miles along the eastern boundary of the San Francisco Bay Plain from the Calaveras fault east of San Jose to Richmond and passes about nine miles southwest of Pleasanton at its nearest point. Two very strong earthquakes occurred on the Hayward fault in the last century - 1836 and 1868 - both of which have estimated magnitudes of about 6.8 on the Richter scale. Seismologists have recently estimated an MCE of 6.9 for the Hayward fault. An earthquake of this magnitude would generate several feet of surface rupture over a fault length of about 30 miles and, if centered in the east Bay area, would produce strong ground motion (MM VIII) in the Pleasanton area. Currently, the Hayward fault is the source of frequent small earthquakes (M 4.0 or less) as well as a creep from Fremont to the north through Berkeley and San Pablo (4 to 7 mm per year).

Calaveras Fault

The **Calaveras fault** extends from the San Andreas fault near Hollister to about 80 miles northwest to the vicinity of Danville. It passes through the Pleasanton Planning Area along Pleasanton Ridge and is considered to be the most significant active fault in the area. The historic record shows three moderate to strong earthquakes have occurred along the Calaveras fault - the 1861 San Ramon Valley earthquake (MM VII), the 1979 Gilroy earthquake (M 5.8), and the 1984 Morgan Hill earthquake (MM VIII). Seismologists estimate an MCE of about 7.0 for the Calaveras fault. The effects of such an earthquake would be similar to those of the 1868 Hayward earthquake (M 6.8) including surface rupture of several feet and intensity of shaking near the epicenter of MM IX or greater.

Concord Fault

The structural relationship of the **Concord fault** is less certain than others and it may be part of a fault zone that also includes the Calaveras fault to the south and the Green Valley fault to the north. However, the Concord fault appears to be distinctly separated from the northern end of the Calaveras fault, beginning near Walnut Creek and extending north of Concord. Although no major earthquakes have originated from the Concord fault, it is estimated to have an MCE value of 6.3. Because of its distance from Pleasanton (about 15 miles), an earthquake of this size or even smaller will have a lesser impact on the Planning Area than an MCE event on the Calaveras fault. The intensity of an MCE on the Concord fault (MM IV) in the Pleasanton area would approximate that of the 1984 Morgan Hill earthquake (M 6.2).

Greenville Fault

The **Greenville fault** is an active fault which borders the Amador-Livermore Valley on the east. A segment of the Greenville

fault about 11 miles northeast of Pleasanton was ruptured in the 1980 Livermore Valley earthquake sequence (M 5.9 and M 5.3). The maximum intensity of shaking in the Pleasanton area was MM VII, causing some local damage. An MCE of M 6.5 has been estimated for the Greenville fault which would produce shaking on the order of MM VII to MM VIII in the Pleasanton Planning Area.

Other Nearby Faults

Several other active or potentially active faults have been mapped within or near the Pleasanton Planning Area including the Pleasanton, Parks, Verona, Las Positas and Livermore faults (Figure V-1). These are intrablock faults which have much shorter lengths and total displacements than the regional strike-slip faults and are not considered capable of producing large magnitude earthquakes or significant surface displacements.

Greatest Seismic Risks in Pleasanton

The greatest seismic risk for the Planning Area is a **large earthquake** (M 7.0) on the Calaveras fault with an epicenter located on or near the northeast flank of Pleasanton Ridge. Moderate to large earthquakes at somewhat greater distances from the Planning Area on the Calaveras or Hayward faults or, to a lesser extent, the Greenville and Concord faults, or a great earthquake (M 8.0+) on the Bay Area segment of the San Andreas fault could also cause severe seismic shaking and damage in the Pleasanton Planning Area.

Seismic Hazards and Impacts

Surface faulting is the fracture of soil or rock on the earth's surface. Surface faulting could occur locally along the Calaveras fault although the probability is low that it would occur along the Verona fault. A moderate to large magnitude earthquake (M 7.0) with an epicenter in or near Pleasanton could produce several feet of horizontal surface displacement along the main fault trace with lesser displacements distributed on subsidiary traces. The potential for ground rupture due to fault creep appears to be low where both the Calaveras and Verona faults pass through the Planning Area.

Ground shaking is a complex surface wave motion produced by the passage of seismic waves through the earth's outer crust. Factors which determine shaking intensity at a given location are distance from the epicenter, magnitude and duration of the earthquake, and local soil, geologic and ground water conditions. Ground shaking generated by earthquakes causes far more damage over a wider area than does surface fault rupture (Figure V-3). Within the same region, ground shaking tends to be more severe in areas underlain by unconsolidated deposits, such as the Amador Valley, than bedrock areas.

For large earthquakes on the San Andreas and Hayward faults and more distant segments of the Calaveras fault, the expected shaking intensities should be most intense in the central, north and eastern parts of the Planning Area and least intense along Pleasanton Ridge, with felt intensities intermediate in those areas along the base of Pleasanton Ridge and in the southeast hills. However, a very large number of variables affect shaking intensity and this observation is applicable in only the most general sense.

Earthquake induced **ground failures** that could affect the Planning Area include landslides, mudslides, lateral spreading, liquefaction, lurch cracking, stream and canal bank failures, rock falls, and differential settlement of the ground surface not directly attributable to one of the foregoing. The potential for seismically generated ground failures (with the possible exception of rock falls) is greatly increased if an earthquake occurs during a period of heavy annual rainfall, when hillslopes are saturated and the groundwater table is nearer the surface.

Earthquakes can cause **landslides** due to the shaking of unstable rock and soils resulting in a sliding of the surface on even gentle slopes. Figures V-2, V-3 and V-4 show that Pleasanton Ridge and the area of low hills to the south of Pleasanton are landslide prone areas.

A high potential exists for new landslides or reactivation of existing small landslides (both earthflows and rotational slumps) within these landslide prone areas during large magnitude earthquakes on a nearby active fault, particularly if the earthquake coincides with or follows shortly after a season of heavy rainfall. A potential for large-scale, deep-seated landslides on hillslopes underlain by the Livermore Gravels in the southern part of the Planning Area may also exist although the potential for future development in this area is limited by its designation as Public Health and Safety.

Lateral spreading is lateral movement of soil on top of liquefied granular or sandy soils induced by strong seismic shaking. Lateral spreading can cause severe cracking and differential displacement of the ground surface for distances of up to several hundred feet.

A relatively high potential for lateral spreading appears to exist within the Pleasanton Planning Area during earthquakes that produce local shaking intensities of approximately MM VIII+ (Figure V-4). The most susceptible areas are considered to be zones up to a few hundred feet wide along streams and canals (Arroyo Mocho, Arroyo del Valle, Tassajara Creek, Mocho Canal, Alamo Canal, etc.) where surface materials consist of young alluvial and fluvial deposits underlain by a very thick sedimentary sequence (Figure V-3). Large, poorly compacted landfills and the land adjacent to the high cut banks in gravel pits on the east side of the Planning Area are also potential

sites of lateral spreading during large earthquakes. The potential for lateral spreading is greatly increased during or after periods of **heavy rainfall** when water tables are closer to the surface, and the ground is more generally saturated.

Strong seismic shaking is the major cause of **liquefaction** which can turn certain granular soils into a kind of quicksand. The most easily liquefied sediments under such conditions are clean, well-sorted layers of silt or sand.

Liquefaction can occur when shaking intensities are approximately MM VIII+ or greater, and a relatively high potential for its occurrence exists throughout those areas underlain by young alluvial and fluvial deposits (Figures V-4 and V-5) in the Amador Valley. Areas underlain by clay-rich interfluvial basin deposits have a somewhat lower liquefaction potential. Detailed studies are required to assess the actual liquefaction potential at a specific site underlain by young unconsolidated sediments (Figure V-5) since the combination of a liquefiable zone and a high groundwater table is necessary to produce the potential hazard. As with other types of seismically induced ground failures, the potential for liquefaction increases when water tables are elevated. Estimates of the relative impacts of liquefaction on zones within the Planning Area are shown in Figure V-3.

Lurch Cracks are random cracks and fissures in the soil induced by strong seismic shaking. Many lurch cracks are directly related to lateral spreading and liquefaction. Numerous random ground cracks and fissures are often produced in deep alluvium when the intensity of seismic shaking is approximately MM VIII or greater. Many lurch cracks are directly related to areas of lateral spreading and liquefaction. Others are produced when the amplitudes of the seismic waves that deform the alluvium are so great that permanent deformation and cracking of the ground surface occurs. Lurch cracks can also form at the contact between unconsolidated and consolidated deposits along the margins of a valley. The potential for lurch cracks associated with shaking intensities of MM VIII or greater is moderate to high for areas underlain by unconsolidated deposits or semi-consolidated deposits shown in Figure V-5. Because of the numerous variables that contribute to their occurrence, it is not possible to predict accurately the detailed distribution of lurch crack potential, however, the estimated relative impact of this hazard in the Planning Area is shown in Figure V-3.

Rock falls can occur when nearly vertical slopes fail during strong seismic shaking. Although no vertical, naturally occurring cliff-like slopes are present within the Pleasanton Planning Area, quarrying operations have produced cliff-like exposures in the gravel pits on the east side of the Planning Area, in the Moller Quarry, and an area above Castlewood Country Club on Pleasanton Ridge (Figure V-5). Small rock falls could occur at these locations during a large earthquake. There are parts of Pleasanton Ridge within the Planning Area that have very

steep naturally occurring slopes. In some places there are road cuts into the already naturally steep terrain. In these areas it is possible that localized rockfalls could occur. As rocks move rapidly downslope, debris avalanches could form. Rockfalls could cause localized damage in downslope areas (Figure V-3). Such occurrences would be most likely during strong earthquake shaking.

Differential settlement is the downward movement of soil caused by a shift in underlying sediments which results in a depression in the soil surface. Differential settlement of the ground surface often occurs in areas affected by liquefaction and lateral spreading. During strong seismic shaking (on the order of MM VII+), differential settlement can also occur in an area underlain by thick unconsolidated alluvium. In general, the potential for seismically induced differential settlement cannot be evaluated at a specific site (even by relatively detailed geologic studies), since ground surface settlement might occur over a very large area that exceeds the boundaries of a specific site.

The most significant potential impacts from earthquake related ground failures within the Pleasanton Planning Area are caused by landslides, lateral spreading, and liquefaction. Lurch cracking (not related to lateral spreading and liquefaction) and stream and canal bank failures could also have significant but more localized impacts. It appears that no part of the Pleasanton Planning Area is free from the potential effects of these induced ground failures (Figure V-4), and the impacts from these failures will generally be much more severe if the earthquake occurs during a period when the water table is high.

Seiches are earthquake induced water waves in a confined body of water caused by periodic oscillation of the water in response to ground shaking. Typically, they are less than one foot high and affect only the immediate shoreline. Similar water waves could also be caused by large landslides falling into the water body.

The **Del Valle Reservoir** is approximately six to seven miles upstream from the Planning Area on Arroyo del Valle (Figure V-6). The lake impounded by the dam is about four miles long. Del Valle Reservoir, gravel pit lakes, and the lake at Shadow Cliffs Park are the only large bodies of water in which seiche development could possibly affect the Pleasanton Planning Area.

The possibility that the Del Valle Dam could be overtopped by seiches or water waves generated by landslides during a large earthquake is very remote since the reservoir is seldom completely full. In the very unlikely event overtopping did occur, the small amount of overflow would be attenuated along Arroyo del Valle between the dam and the Planning Area and should be easily contained within the stream channel. Seiche waves generated in the lake at Shadow Cliffs Park would be relatively small (1-2 feet). They could run up on the beach area and have

minor effects on the shoreline facilities, but would occur only during very large earthquakes. Thus, seiches are considered to pose a relatively low hazard, and only local impacts are anticipated in the Planning Area should seiches develop during a large earthquake.

Large earthen dams like Del Valle Dam could fail due to lateral spreading and severe cracking of the dam embankment, failure of the foundation, or by actual fault displacement of the dam or its abutments.

The potential for seismically induced failure of Del Valle Dam and subsequent **flooding** of the Planning Area is considered to have an extremely low potential for occurrence. An inundation map (Figure V-6) showing the maximum area that would be flooded in the event of failure of Del Valle Dam for any reason was prepared under the direction of the Offices of Emergency Services for the State of California (2). The map was prepared assuming the Del Valle Reservoir would be filled to capacity at the time of failure and that failure would be sudden and complete rather than progressive. Figure V-6 shows that the business district and most of the dwellings in the City of Pleasanton would be flooded. However, this impact is considered to have an extremely low potential for occurrence, whether an earthquake or some other cause is the mechanism for dam failure.

Geologic Hazards Not Earthquake Related

Three other geologic hazards not related to earthquakes include landslides not related to seismic shaking, expansive soils, and subsidence induced by groundwater withdrawal.

Landslides

The unusually wet winters of 1981-82 and 1982-83 provided ample evidence that seismic shaking is not a prerequisite to the development of numerous new **landslides** and the reactivation of old landslides throughout the upland areas shown in Figure V-2.

The General Plan Map responds to the potential for landsliding in the Planning Area by designating a majority of the land on Pleasanton Ridge and the southeast hills as Public Health and Safety. Flatter and generally more stable portions of these areas are designated for Low Density Residential development and surrounded by Rural Density Residential development because the potential for landslides and other hazards appears to be sufficiently low in these areas.

For general planning purposes, a high potential for active landsliding should be considered to exist on all slopes bordering the Amador Valley and other hill slopes within the Planning Area, unless site specific geotechnical investigations can demonstrate local stability (Figure V-3).

In addition to the geologic factors that promote widespread instability of the slopes in the local area, development that is not properly planned, designed and constructed in landslide prone areas can also increase the likelihood of **slope failures**. Improperly designed or poorly located cuts and fills are among the primary causes for further destabilizing hill slopes and reactivating existing landslides. Improper grading, road construction, utility line installation, paving, poor drainage control, and landscaping can also significantly contribute to slope stability problems.

Expansive Soils

Expansive soils are surface deposits rich in clays that expand when wet and shrink when dried. While this geologic hazard does not produce the catastrophic impacts of a large earthquake, their cumulative economic cost to a community can be considerable. Shrink-swell activity in subsurface soils can seriously damage building foundations, streets and other paved areas, underground utilities, and swimming pools. When expansive soils are present on a slope, they can promote downslope creep of the entire thickness of surficial deposits present on the slope (in some cases to depths of more than 10 feet).

Expansive soils are potentially present at or near the surface in areas in northern Pleasanton and along the northeastern flank of Pleasanton Ridge. A moderate potential exists for their presence throughout the remainder of the Planning Area, and site specific studies are required to determine their actual presence at a given location. Figure V-3 presents an evaluation of how the impacts of expansive soil are distributed throughout the Planning Area.

Differential Subsidence Caused by Groundwater Withdrawal

Prolonged pumping of groundwater can lower the water table over a large area and contribute to **differential settlement**. In extreme cases, differential subsidence and cracking of the ground surface can occur.

Even though the **water table** has been lowered by up to 150 feet within the Planning Area by pumping, no differential subsidence or other effects have been noted at the ground surface. A program of groundwater recharge has been under way for several years, and groundwater levels have since returned to normal throughout most of the Planning Area. No differential subsidence related to groundwater withdrawal has been reported in the past and, in view of the current program of recharge, no hazard presently exists.

The Impacts of Seismic Hazards on the Planning Area

The preceding discussion indicates that an MCE (Table V-2) on the San Andreas, Hayward, or Calaveras fault (at a distance of ten

miles or more) or a more moderate magnitude earthquake (M 6+) on the Calaveras fault with an epicenter near Pleasanton could cause widespread damage due to strong ground shaking (intensities of MM VII to VIII+) and secondary ground failures (primarily landslides, lateral spreading, and liquefaction). Damage to older, unreinforced buildings will probably be extensive. Modern structures could sustain light to moderate damage. However, local occurrences of ground failures could also severely damage modern structures. Utility lines might be temporarily severed, but most streets and highways should be intact (though many may be temporarily blocked for a variety of reasons).

An MCE (M 7.0) on the Calaveras fault, with a local epicenter and several feet of fault rupture along its mapped trace on Pleasanton Ridge, would probably cause widespread and extensive damage in older structures as well as many modern buildings due to extreme ground shaking (intensities of MM IX+) and to widespread secondary ground failures. A moderate potential exists for the collapse of freeway overpasses and disruption of pavement. Many city streets may be closed and utilities will probably be severed for an extended period of time. The impacts of such an event on the local area would be similar to those experienced during the great San Francisco earthquake of 1906.

Summary of Geologic Hazards and Geologic Zone Map

As discussed in the preceding sections, there are a number of geologic impacts that are significant in the Planning Area. The severity of each impact and the location of each impact within the Planning Area is highly variable. The geology, topography, groundwater table, soil type and seismicity are important factors that determine the kind of geologic impact and the severity. The basic information concerning these impacts is presented in the preceding sections of this report and on Figures V-2 and V-5.

In order to make this geologic information more easily usable by decision makers, a **geologic zoning map** of the Planning Area is included (Figure V-3). This map divides the Planning Area into ten geologic zones, lists the geologic impacts that are important in the zones, and presents an estimation of the severity of the impacts. The geologic zones are delineated primarily on the basis of geologic map units (from Figure V-2 to V-5) and/or topography. The discussions in the preceding text provide the basis for estimates of the significant geologic hazards and the severity of the impacts. Descriptions of the geologic zones and corresponding impacts are summarized in Table V-3.

Mitigation of Seismic and Geologic Hazards

The seismic and geologic hazards described in the preceding section can be mitigated to some degree by evaluating the potential for their occurrence at a given site and implementing **site planning** and engineering practices that will minimize the impacts if a specific hazard exists. In general, measures to

mitigate the impacts of earthquake related hazards will be most effective for earthquakes that generate shaking intensities of MM VIII or less in the area. These measures will be significantly less effective in mitigating the impacts of a magnitude 7.0 earthquake (the MCE) on the Calaveras fault with a local epicenter. The extreme shaking intensities (MM IX+) and high ground accelerations, which could occur in the local area during such an event, would probably cause widespread secondary ground failures and differential settlement in parts of the Planning Area that have already been developed. Fortunately, the potential for such an occurrence appears to be relatively low, based on an evaluation of geomorphic expression of the Calaveras fault trace where it passes through the Planning Area. As a minimum, critical public and private facilities should be engineered to resist the effects of this worst case scenario.

One of the most important steps in mitigating both seismic and geologic hazards will be **site specific geotechnical studies** to evaluate local geologic conditions and to provide the necessary information for seismic design. Reports generated by these studies should become a part of the public record and organized in such a manner that they will become an evolving source of local and geotechnical information more detailed than what is currently available in the published technical literature.

As part of the framework for discussing hazard mitigation, Table V-4 provides a risk classification of structures, occupancies, and land uses. The term "**critical facilities**" is used here to describe structures or uses of land, which are especially important for the preservation of life, the protection of property, or for the continuing functioning of society. For the purposes of hazard avoidance or mitigation, Classes 1-A through 3-B in this table are considered to be "critical facilities." Exposure of the facilities at the top of the list on Table V-4 to frequent, or even occasional hazard would not be acceptable because of injuries and loss of life and property. Table V-5 lists the level of "**acceptable risk**" for these facilities and other types of structures, occupancies, and land uses listed on Table V-4. The term "acceptable risk" as used here describes the level of risk that the majority of citizens will accept without asking for governmental action or protection. Thus, acceptable damage to facilities is correlated with levels of acceptable risk. Together they provide a guide to structural design requirements for facilities in the various risk classes on Table V-4.

Goals, policies and implementation programs which can be employed to mitigate the risks due to seismic and geologic hazards are contained later in this element.

FIRE HAZARDS

The threat of fire poses hazards to both life and property. These hazards exist in both developed and undeveloped regions of the

Pleasanton Planning Area. Fires occurring in developed areas are usually building fires, rubbish fires, automobile fires and grass fires on vacant lots. Fires in undeveloped areas include large brush, grain, and grass fires that can engulf several hundred acres or more.

Wildland Fire Hazards in Undeveloped Areas

Wildland fires are usually caused by human activities such as equipment use and smoking, and result in loss of valuable natural resources, soil erosion and damage to life and property. Once a wildland fire has been ignited, its outcome is affected by three environmental factors: fuel, climate and topography. The California Department of Forestry has developed a Fire Hazards Severity Classification System for California's Wildland Fires which includes ratings based on these three factors.

The quantity and type of vegetation available for burning is called **fuel loading** and is a primary factor in this rating system. **Woodlands** over six feet in height and covering 20% or more of the ground area is categorized as heavy fuel loading. **Scrub** including brush, shrubs and other perennial vegetation less than six feet and having similar coverage is categorized as medium fuel loading. **Open areas** including grasslands, fields, and barren land are categorized as light fuel loading.

Climate conditions including wind, relative humidity and precipitation are other important factors in determining the severity of fire hazards.

These factors are combined to form a **Fire Load Index (FLI)** which is expressed on a linear scale of 0 to 100. An index of 28 to 39 means that the expected fire load is very high while an index of 40 and above is considered extreme. The California Department of Forestry has used this index to study fire danger areas since 1958 and has developed a rating system which ranks each area of the State into one of three classes. The three classes were developed according to the number of days where the FLI equals 28 or more. The Pleasanton area has a Mediterranean climate with cool, moist winters followed by long dry summers and experiences between 1.0 and 9.5 days per year where the FLI equals 28 or more and thus is located in **critical fire frequency class II**.

Topography influences wildland fire behavior and the ability of firefighters to suppress fires once they occur. Fires tend to burn more rapidly upslope than down and the steeper the slope the greater the rate at which the fire spreads. **Steep slopes** also contribute to the channeling effects of winds which spread fires more quickly. In addition, steep slopes increase travel times for fire vehicles and firefighters and restrict the methods possible for fighting the fire. A majority of the area on Pleasanton Ridge and the Southeast Hills is greater than 30% in slope and portions exceed 50%. Three classes of slope are used by the Department of Forestry in calculating the topographic

effects on fire severity. The definition of these three classes in Alameda County are summarized on the following table.

<u>Class</u>	<u>Slope</u>	<u>Possible Firefighting Methods</u>
I	0-30%	Direct attack possible with all-drive firetrucks, bulldozers, handcrews and aircraft.
II	31-50%	Beyond operating capability of all-wheel drive vehicles. Drive attack possible with bulldozers, handcrews and aircraft.
III	50%+	Mostly beyond operating capability of bulldozers. Handcrews and aircraft become primary tools.

Table V-6 defines three fire hazard zones based on a combination of the environmental factors mentioned above. The entire Pleasanton Planning Area is located within Fire Weather Frequency Class 2. Figure V-7 illustrates the different areas of fire hazard within the Planning Area using the information contained in Table V-6 and the other environmental factors described above. These hazard ratings are intended to provide a general appraisal of the chances for a fire to develop and break out of control.

Moderate hazards are generally found in grasslands where fires burn with fairly low heat and are most easily controlled.

Extreme hazards provide the greatest danger and **high hazards** fall somewhere in between. It is important to note that the descriptions given the three ratings avoid the use of a low rating because no portion of the natural landscape can be considered a low fire hazard.

Urban Fire Hazards in Developed Areas

Due to the proximity of people and structures, fires in urban areas pose a great threat to life and property. Certain types of structures pose greater threats than others. Table V-7 shows the categories which the Pleasanton Fire and Building Departments use to classify the potential hazards of various types of buildings. Significant fire hazards in the developed portions of the Planning Area potentially exist for all of the uses contained in Table V-7. Those **structures** posing the greatest fire hazards include public assembly buildings (e.g., Veterans Memorial Hall), institutions (e.g., schools), multiple residential structures (e.g., along Vineyard Avenue), shopping centers (e.g., Stoneridge Mall), hazardous use occupancies (e.g., Kaiser Center for Technology), and multi-story large floor area occupancies (e.g., Meyer Center).

In descending order, the majority of fires in Pleasanton's urbanized area tend to be vehicle, building, grass and refuse fires. Historically, structural fires have occurred mostly in

residential buildings because of the City's large proportion of housing.

In the future, the proportion of industrial, commercial and office building will increase, the existing housing stock will age and new residential developments will be built in previously undeveloped areas adjacent to wildland fire hazard areas. These trends will have an effect on fire hazards and will require greater staff and equipment levels to maintain today's high standard of fire prevention and safety. Existing and projected resources for maintaining and improving the City's high standards of fire safety are contained in the following section.

Public Resources for the Mitigation of Fire Hazards

The **Pleasanton Fire Department** is responsible for fire protection and suppression for all areas within the City limits (15 square miles) in addition to providing contractual services in a number of developed areas outside the City limits including Happy Valley, Reman Tract and Castlewood as well as the Arroyo Vista Housing Tract within the City of Dublin. The California Department of Forestry has jurisdiction in the remainder of Pleasanton Ridge and the Southeast Hills, providing fire protection services through its Sunol Ranger Station located on Sunol Road. The Sunol Station also has jurisdiction over several pockets of unincorporated land adjacent to Pleasanton which logically should be served by the Pleasanton Fire Department. The eastern portion of the Planning Area is under the jurisdiction of the County Fire Patrol located in Livermore. Figure V-8 illustrates these jurisdictional boundaries in addition to the location of existing fire stations within the Planning Area.

The location of fire stations within the Planning Area determine in large part the time it takes for a fire engine to travel from the station to the location of the fire. The ideal **response time** is less than three minutes and should be no more than five minutes based on the time it takes for a building fire to get out of control (i.e., flash-over) and the critical period for providing medical or other emergency services. The Pleasanton Fire Department currently has a response time average of three minutes and twenty-five seconds. Figure V-9 shows the composite response times of all the fire stations within the Planning Area based on the actual driving time between stations and various points within the Planning Area. The majority of the Planning Area lies within a three minute response time and the remainder lies with a five minute response time with the exception of the areas shown in Figure V-9.

In addition to response times, **fire apparatus and personnel** are important factors in fighting and preventing fire hazards. Pleasanton's Fire Department fire prevention, suppression and rescue equipment consists of 13 vehicles, i.e., four engines, one

65-foot aerial ladder truck, two rescue squads, one grass vehicle, one command vehicle and four administrative vehicles.

The Department's paid personnel numbers 50, of which 47 engage in fire suppression. The Sunol station has a minimum of one engine and two men for structural response only during the non-fire season and a maximum of three engines and ten men during the fire season. A typical wildland fire, in comparison, could demand as many as five engines, two administrative vehicles and fifteen firefighters along with access to helicopters and aerial tankers. In order to address this potential deficiency, the Pleasanton Fire Department participates in the Twin Valley **Mutual Aid Agreement** which provides for additional fire suppression services, personnel, and support equipment including nine engine companies, one truck company, twenty-four firefighters, nine chief officers, and Breathing Air Support/Lighting vehicles for building fires. The Mutual Aid Agreement also provides 13 grass fire vehicles with 26 firefighters, ten chief officers, one bulldozer and three water tankers for wildland fire control.

Another important requirement in fire suppression is adequate **fire flow** which is the amount of water, expressed in gallons per minute, available to control a given fire. The total fire flow needed to extinguish a given fire is a function of building construction, occupancy, area, and height; fire loading; and distance between buildings. The City's Fire Department uses the Insurance Services Office (ISO) rating system for determining necessary fire flow. Fire flow for a given building is totally dependent on a reliable water supply, standards for which are set nationally and by the City in its Design Guide. Pleasanton's fire flow is adequate throughout the City with a few exceptions, including portions of Downtown and the Southeast Hills. Measures to mitigate problems in these areas include the addition of sufficient reservoirs and/or water mains and hydrants or built-in fire protection systems, such as automatic fire sprinklers.

Fire Prevention

In addition to adequate means of fire suppression, **fire prevention** efforts are essential to an effective fire protection program. The best way to control a fire is to prevent it from occurring in the first place. The Pleasanton Fire Department encourages this approach through its public **education programs** and **regularly scheduled inspection** of all non-residential buildings. The Building and Fire Departments also require built-in **fire protection systems**, in certain new developments, including automatic fire sprinklers, fire resistant construction, early warning fire detection systems, in addition to access and setback requirements which facilitate firefighters' entry and provide fire breaks.

In order to implement fire protection measures, the Ordinance Code of the City of Pleasanton contains four sections that bear directly on fire safety. The **Building Code** provides minimum

standards for design, construction, materials, use, occupancy, location and maintenance of all buildings within the City. The **Fire Code** regulates how a building is used, how machines and equipment are maintained, how hazardous materials are handled and stored, and how access to and from the site is provided. The **Zoning Ordinance** regulates site location and design, the type and intensity of land uses, building height and separation, access and street layout. The **Subdivision Ordinance** establishes standards for roadway dimensions, subdivision layout and public improvements needed to protect public safety. In addition, all new developments are reviewed by City departments for their potential effects on public safety, conditions are attached to minimize those effects and inspections conducted to ensure proper installation.

Pleasanton's fire protection services are evaluated by the Insurance Services Office (ISO) whose ratings establish the fire insurance rates paid by local residents and businesses. ISO evaluates water supply, department equipment, personnel, operations and communications systems. Pleasanton's ISO rating has improved from 6, in 1971, to 3 in 1983, on a scale of 1 to 10. One of the Fire Department's objectives is to maintain or improve that rating so as not to increase insurance rates for Pleasanton residents and businesses.

Pleasanton's plans for maintaining and improving fire protection services in the future are detailed in the Goals, Policies and Programs section of this Element.

FLOOD HAZARDS

The Pleasanton Planning Area is subject to flood hazards resulting from **dam failure** and heavy rainfall. If the Del Valle Reservoir, which holds 77,100 acre-feet of water at full capacity, were to fail due to an earthquake or similar disaster, water in the dam would be released and flooding of the Amador Valley would occur as shown in Figure V-6. The resulting inundation area assumes that the reservoir would be filled to the maximum, which it usually is not, and that the dam would fail suddenly and completely. Although the dam's failure has only a very small likelihood of occurrence, the potential for extensive property damage and loss of lives is very great.

The other type of flood hazard existing in Pleasanton results from the possibility of **heavy rain** causing natural flooding due to the overflow of stream courses. Historically, the Amador Valley has experienced relatively frequent and substantial flooding because many streams which drain large areas of impermeable soils converge in the area. During periods of intense rainfall, runoff is rapid causing stream flows to exceed floodway capacities and inundate large areas of the flat valley floor. Extensive flood channel improvements required of recent development projects have significantly reduced this type of flood hazard. Figure V-10 illustrates those portions of the

Planning Area still remaining within the **100 year flood zone**. This 100 year flood zone refers to the level of flooding that has been estimated to occur, on the average, once every 100 years in a given area (1% chance per year).

Public Resources for the Mitigation of Flood Hazards

The Planning Area lies within **Zone 7** of the Alameda County Flood Control and Water Conservation District which is empowered to control and conserve flood and storm waters, and protect water sources, watersheds, highways, life and property from damage from such waters. Zone 7 has overseen improvements to all of the City's streambeds and plans to protect portions of the Arroyo de la Laguna, south of Bernal Avenue, as a natural riparian habitat. Areas where **flood control improvements** still need to be made include the confluence of the Arroyo Las Positas into the Arroyo Mocho in the area between El Charro Road and the existing City limits. In addition, an annual maintenance program designed to maintain the capacity of the existing Arroyos throughout the City is needed to mitigate any flood hazard potential and keep the flood hazard to a minimum.

In addition to flood control improvements, residents of areas subject to flooding can seek partial relief through the **National Flood Insurance Program** which provides flood insurance at affordable rates through a federal subsidy. In areas subject to 100 year flooding, as shown on Figure V-10, flood insurance must be purchased as a condition of obtaining Federally insured mortgages or insurance for the purchase or construction of buildings and new structures must be adequately "floodproofed". Figure V-10 can be used in conjunction with flood insurance rate tables to calculate the cost of flood insurance required within the Planning Area.

HAZARDOUS MATERIALS

Currently there are 120 locations in Pleasanton where **hazardous materials** are used or stored of which 56% are retail gas stations or operations with gasoline storage tanks. The Fire Department maintains a computerized list of hazardous material users and screens all applicants for use permits. As the City develops additional industrial and commercial uses, there will be an increase in the amount and variety of hazardous materials handled and stored within the Planning Area. Hazardous materials include industrial wastes (e.g., solvents), pesticides (e.g., bug spray), radioactive wastes (e.g., laboratory by-products), infectious wastes (e.g., medical specimens) and combustible fuels (e.g., gasoline).

In anticipation of this increase, the City of Pleasanton has adopted a **Hazardous Materials Storage Permit Ordinance** (3) which is designed to define materials which are hazardous; minimize the potential of an accidental discharge; provide early warning in the event of a discharge; minimize the potential for groundwater

contamination; and provide a means of inventorying, monitoring and inspecting the storage of hazardous materials in locations throughout the City. A permit is required for the storage of any hazardous material in an underground tank. Underground tanks are required to have a secondary containment, a monitoring system for leak detection and simplified emergency procedures visible at the storage location.

In order to accomplish these objectives, the Ordinance provides **standards** for containment; requires site specific management plans; provides for an inventory of all materials classified as hazardous while protecting trade secrets; stipulates responsibilities for reporting discharges and conducting clean-up; provides the authority for City inspections; and enables civil and criminal penalties for violations of the Ordinance. The City has hired a chemical specialist in the Fire Department to assist businesses in complying with the provisions of the ordinance.

AVIATION HAZARDS

Airports

Although not located within the Pleasanton Planning Area, the **Livermore Municipal Airport** potentially affects land uses in Pleasanton in the form of noise and safety impacts. In Alameda County these impacts are regulated by the Airport Land Use Commission (ALUC) by means of an Airport Land Use Policy Plan (4). The Plan reflects anticipated airport growth over a 20 year period and attempts to prohibit or reduce obstacles to air navigation, exposure of persons on the ground to accident potential, crash hazards such as smoke, glare and electrical interference and noise exposure. In order to mitigate these impacts, the Plan includes building height restrictions, allowable uses of land, and building standards, such as soundproofing, in areas affected by airport operations.

Surrounding the Livermore Airport, the ALUC has adopted a **General Referral Area** within which the City must submit proposed projects to the ALUC for their review and determination of consistency with the Airport Land Use Policy Plan. The Plan also establishes boundaries for safety zones at both ends of airport runways, height referral areas within airspace affected by aircraft activities, crash hazard zones, and noise impact zones based on long range projections of airport noise exposure. These boundaries and the policies which apply within them are described in detail in the Airport Land Use Policy Plan. These boundaries are shown in Figure V-11.

Pleasanton's General Plan and the proposed Specific Plan for the Staples Ranch area must be consistent with the Airport Land Use Policy Plan. The Pleasanton General Plan Map does not contain any land within the Livermore Airport noise or safety zones. Substantial areas within the Pleasanton Planning Area lie within

the Airport's height referral area, although they are located at sufficient distances so that all uses allowed under the City's 85 foot zoning height limit for commercial and industrial uses and 40 foot limit for residential uses would be compatible.

Heliports

Hacienda Business Park operates a temporary **heliport** near Owens and Chabot Drives and has proposed a permanent heliport near the proposed transportation complex near I-580 and the South Pacific railroad tracks. The heliport began operating in 1986 and is projected to generate up to 80 flights per week during business hours. Flight paths to and from the heliport are proposed to be directly over I-580 and are distant enough from any residential development not to create any problems with respect to noise or safety.

EMERGENCY OPERATIONS

The City of Pleasanton has adopted an **Emergency Operations Plan** (2) to provide for the safety of the community in the event of a major emergency such as an earthquake, flood, fire, nuclear accident, civil disturbance, or war. The Plan provides the basis for direction and control of emergency operations and continuity of government, saving life and property, repairing and restoring essential systems and services, managing remaining resources and coordinating operations with other jurisdictions.

The Plan contains specific task assignments of various City personnel under emergency conditions including staffing of warning and communications systems, emergency operating centers and shelters. When a disaster occurs, the normal governmental organization converts to one more effective in coping with the public health and safety problems created by an emergency. The City has established its new Police Department facility at 4833 Bernal Avenue as an **Emergency Operations Center** which is designed to function as a communications and administrative headquarters in the event of an emergency. The new Fire Station at 6300 Stoneridge Mall Road has the capability and has been designated as the Alternate Emergency Operations Center. Other critical facilities which could be utilized in an emergency are shown in Figure V-12 and Table V-8.

Public Safety Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

V. PUBLIC SAFETY GOALS, POLICIES AND PROGRAMS

Goal 1: To minimize the risks to lives and property due to **seismic activity** within the Planning Area. (SSE, General Goal, p. 7)

Policy 1: Restrict development in areas prone to **seismic safety hazards**.

Program 1.1: Comply with the provisions of the **Alquist-Priolo Act** and other seismic safety criteria established by the City of Pleasanton. (SSE, Subgoal 5, p. 8)

Program 1.2: Prohibit construction of habitable structures within at least 50 feet of an identified **fault trace** (Figure V-II) as shown in site specific geologic studies. (M&S, p. 53)

Program 1.3: Require **geologic studies** for any project proposed within areas shown on current Alquist-Priolo Special Studies Zones Maps (Figure V-2) before permitting structures for human occupancy. (M&S, p. 52)

Program 1.4: Require **technical review** of all geologic studies by a qualified Engineering Geologist reporting to the City of Pleasanton. (M&S, p. 52)

Program 1.5: Prohibit construction of any **critical facilities** such as hospitals and fire stations (see Class 1 and 2 in Table V-4) within the Alquist-Priolo Special Studies Zones. (M&S, p. 53)

Program 1.6: Design new roads, bridges and utility lines that cross an active fault trace in a manner which can withstand the **acceptable damage levels** specified in Table V-5. (M&S, p. 53)

Program 1.7: Implement the earthquake preparedness provisions of the City's **Emergency Operations Plan**. (SE, Policy 20, p. II-10)

Policy 2: Investigate the potential for seismic and geologic hazards as part of the **development review**

process and maintain this information for the public record. (OPR, p. 135)

Program 2.1: Require site specific **soils, geologic and/or geotechnical engineering studies** prior to development approval of sites potentially subject to seismic and non-seismic hazards as shown in Figure V-3 where the potential geologic hazard is moderate through high. (OPR, p. 135; M&S, p. 49-51)

Program 2.2: Require measures to mitigate potential safety hazards for structures lying within the areas shown on Figure V-3 according to their size, location and acceptable **risk classification** as shown in Table V-5. (M&S, p. 54)

Program 2.3: Require appropriate **engineering and design mitigations** for structures proposed in areas where seismic hazards can be mitigated to the point of acceptable risk (Table V-5). (M&S, p. 55)

Program 2.4: Require **technical review** of geotechnical engineering studies by a qualified geotechnical engineer reporting to the City of Pleasanton. (M&S, p. 52)

Program 2.5: Require professional **inspection** of foundation excavation, earthwork and other geotechnical aspects of site development during construction of those sites specific in soils, geologic and geotechnical engineering studies.

Program 2.6: Establish a list of prequalified geologic, geotechnical, civil and structural **engineering firms** that are acceptable to the City of Pleasanton.

Policy 3: Require **post earthquake construction**, if needed, to conform to all City codes and ordinances. (OPR, p. 135)

Program 3.1: Require **building permits** and enforce all current building requirements and codes for post earthquake construction.

Policy 4: **Rehabilitate** or remove those structures in the City which are especially susceptible to fire, flooding and seismic hazards. (SSE, Subgoal 4, p.8)

Program 4.1: Update the City's inventory of those **structures** located in the hazardous areas shown in Figures V-2, V-7, V-9 and V-10. (SSE, p. 19)

Program 4.2: Develop guidelines and procedures for **rehabilitating** structures located in potentially hazardous areas. (SSE, p. 19)

Program 4.3: **Retrofit** existing critical utility lines that cross active faults with automatic shutoff devices or other means to accommodate surface rupture. (M&S, p. 53)

Goal 2: To minimize the risks to lives and property due to **landslides** and other non-seismically induced geologic hazards within the Planning Area. (SE, Goal 3, p. II-8)

Policy 5: Prohibit the construction of any structure intended for human occupancy in any **landslide prone area** (shown as moderate through high on Figure V-3 and Table V-5) unless geologic investigation or project mitigations demonstrate low level of acceptable risk at the site (Table V-5). (M&S p. 54)

Program 5.1: Require **geologic and geotechnical engineering studies** for all new development prior to issuance of building permits on slopes greater than 20% and within areas of high, moderate to high or moderate potential for landsliding or areas deemed necessary by the Chief Building Inspector. (SE, Policy 16, p. II-8)

Program 5.2: Require developers to include **drainage, erosion and landslide mitigation measures**, where necessary, to reduce landslide potential. (SE, Policy 17, p. II-9; SE, Policy 18, p. II-9)

Program 5.3: Minimize **earth moving** activity in areas of moderate to high landslide potential. (SE, Policy 17, p. II-9)

Policy 6: Discourage the withdrawal of **groundwater** which may create subsidence, landslides, and cracking of the ground surfaces. (M&S, p. 46)

Program 6.1: Work with Zone 7 to insure that the **groundwater level** remains stable.

Goal 3: To minimize the risks to lives and property due to **fire hazards** within the Planning Area. (SE, Subgoal 1, p. II-2)

Policy 7: Provide an adequate level of **fire equipment and personnel** to protect the community. (SE, Policy 1, p. II-2)

Program 7.1: Incorporate Fire Department expansion needs into each year's **Capital Improvement Program** and Operating Budget. (SE, Program 1, P. II-2)

Program 7.2 Require new development to pay for incremental expansion of **fire safety improvements**.

Program 7.3: Purchase and staff a 100-foot **aerial ladder truck** and complete a five-story training tower facility.

Program 7.4: Replace one **Rescue Squad** and maintain the replaced apparatus in reserve.

Program 7.5: Provide a four wheel drive **command vehicle** with computer capability for the Duty Chief.

Program 7.6: Add another **Engine Company** within the next five years.

Program 7.7: Equip a vehicle to provide breathing air cylinder refilling at **hazardous material** or fire incident scenes.

Program 7.8: Replace out-of-date **apparatus** and equipment on a scheduled basis.

Program 7.9: Maintain high standards of hiring **personnel** and continue to provide in-depth training of department personnel to maintain and improve knowledge and skill levels.

Policy 8: Annex all **fire pockets** (territory enclosed by Pleasanton Fire Department Service Areas but not itself serviced) within the Pleasanton Planning Area. (SE, Policy 2, p. II-2)

Program 8.1: Initiate discussions with landowners of **unincorporated areas** shown on Figure V-8.

Policy 9: **Respond** to all fire calls within five minutes. (SE, Policy 3, p. II-2)

Program 9.1: Recommend denial of all proposed developments not within a **five minute response time** of a Fire Station (Figure V-9) unless acceptable mitigations are provided. (SE, Program 4, p. II-3)

Program 9.2: Develop a system of fire hazard **mitigations** based on the probability of occurrence and number of people at risk.

Program 9.3: Constantly evaluate the need for a **new Fire Station** in the Vintage Hills area, as development takes place to the east and southeast, as well as in other areas as the City expands beyond its current boundaries.

Policy 10: Maintain or improve the City's existing **ISO fire protection rating** of 3. (SE, Policy 11, p. II-6; SE Policy 4, p. II-3)

Program 10.1: Upgrade the existing substandard water distribution system in the **Central Business District**.

Program 10.2: Require developers to finance and construct additional **water facilities** in present contract areas when these areas are annexed and developed. (SE, Program 6, p. II-3)

Program 10.3: Continue to require that all new developments be provided with sufficient **fire flow facilities** at the time of development. (SE, Program 5, p. II-3)

Program 10.4: Continue the fire prevention bureau's **public education** programs. (SE, Policy 8, p. II-5)

Policy 11: Upgrade the level of **fire resistivity** in all new and remodeled structures. (SE, Policy 5, p. II-3)

Program 11.1: Continue to update and enforce the City's **fire and building codes** with new technologies. (SE, Program 8, p. II-3)

Policy 12: Require **fire mitigation** measures in new developments proposed within those areas outside the five minute response time zones shown in Figure V-9. (SE, Program 4, p. II-3)

Program 12.1: Require the installation of **early warning fire detection systems** or devices in all residential structures, and certain commercial structures. (SE, Policy 6, p. II-4)

Program 12.2: Require automatic **fire sprinklers** in all structures required in the Uniform Building Code in addition to all structures of 8,000 square feet and greater and all residences located in fire hazard areas (Figures V-7 and V-9). (SE, Policy 7, p. II-5)

Program 12.3: Ensure that all buildings be accessible to **fire vehicles** and fire fighting equipment. (SE, Policy 9, p. II-6)

Program 12.4: Identify potential fire hazards in all **non-residential occupancies** and require their removal. (SE, Policy 10, p. II-6)

Program 12.5: Require a greater degree of fire resistivity in **roof covering** for buildings within hazardous areas.

Program 12.6: Cooperate with the California Department of Forestry to develop methods of reducing **fuel loading** in Public Health and Safety areas which are consistent with other City policies regarding scenic views, landslides, etc.

Program 12.7: Continue the Fire Department's voluntary home fire safety **inspection program**.

Goal 4: To minimize the risks to lives and property due to **flood hazards** within the Planning Area. (SE, Goal 2, p. II-7)

Policy 13: Inform the public of the Del Valle Dam **evacuation system**. (SE, Policy 12, p. II-7)

Program 13.1: Conduct public meetings and issue press releases regarding **public evacuation** procedures.

Policy 14: Prohibit all development within the **100 year flood zone** unless mitigation measures which meet Federal Insurance Administration criteria are provided. (SE, Policy 14, p. II-8)

Program 14.1: Abide by the regulations of the **National Flood Insurance Program** and continue to amend City Ordinances. (SE, Policy 13, p. II-7, SE, Policy 25, p. II-7)

Program 14.2: Support Zone 7's efforts to complete the **channelization system** for the Planning Area in order to remove properties from flood hazard zones. (SE, Policy 15, p. II-8; GME, Policy 36, p. 21)

Program 14.3: Cooperate with Zone 7 to preserve riparian corridors and **recreation potential** when making channelization improvements.

Goal 5: To minimize the risks to lives and property due to the use and storage of **hazardous materials**.

Policy 15: Regulate the delivery, use and storage of **hazardous materials** within the City limits. (IGPRC, Recommendation E.3, p. 63)

Program 15.1: Enforce the provisions of the City's **Hazardous Materials Storage Permit Ordinance**. (IGPRC, p. 63)

Program 15.2: Require scheduled **on-site monitoring** of all sewer outfalls for sites permitted to store hazardous materials. (EMC, p. 4)

Program 15.3: Work with Caltrans to complete the system of asphalt curbs and catch basins to improve **containment** of potential liquid chemical spills. (EMC, p. 4)

Program 15.4: Expand the Fire Department's **automated data system** to speed identification of hazardous materials and users in the event of an emergency.

Goal 6: To minimize the risks to lives and property due to **air navigation hazards** generated by the Livermore Airport. (SE, Goal 6, p. II-11)

Policy 16: Deny any development which creates any **air navigation hazards** due to electrical interference, smoke, glare, lighting, or other navigational hazard in the General Referral Area. (SE, Policy 23, p. II-11; ALUC, Policy 8, p. 10-13)

Program 16.1: Refer all General Plan amendments, Specific Plan amendments and rezonings proposed within the **General Referral Area** to the Alameda County Airport Land Use Commission (ALUC).

Program 16.2: Refer all General Plan amendments, Specific Plan amendments, and rezonings which lie within the Livermore Airport **Height Referral Area** and which may create buildings exceeding airport height standards to the Alameda County ALUC.

Goal 7: To operate efficiently in case of any catastrophic **emergency**. (SE, Goal 5, p. II-10)

Policy 17: Promote public awareness of the City's **Emergency Operations Plan** and implement its recommendations. (SE, Policy 20, p. II-10; SE, Policy 21, p. II-10)

Program 17.1: Develop the Fire Department's proposed system of **sirens and speakers** which relay specific instructions to the public during an emergency.

Program 17.2: Conduct periodic **emergency exercises** among City staff members and other key personnel. (SE, Program 33, p. II-10)

DEFINITIONS: **Active Fault** is a fault which has exhibited displacement or seismic activity within the past 11,000 years.

Potentially Active Fault is a fault which has moved during the past two to three million years but not proven to have moved within the past 11,000 years.

Maximum Credible Earthquake (MCE) is the largest earthquake that is likely to be generated along an active fault.

Alluvium is a general term for unconsolidated sediment (such as silt, sand and gravel) deposited during relatively recent geologic time by a stream or other running water.

Fluvial deposits are sedimentary deposits produced by the action of a stream or river.

Geologic Studies are prepared by a registered geologist and address faulting, slope stability, erosion, seismicity and related hazards.

Geotechnical Engineering Studies are prepared by registered engineers and address subsurface soils, drainage and other conditions for purposes of designing foundations, pavements, retaining walls and other improvements affected by soil conditions.

Seismicity is the earth movement phenomena as related to earthquakes; also a measure of the area's susceptibility to earthquakes.

Footnotes

- (1) For a more detailed explanation of seismic and geologic hazards, please see Merrill & Seeley, Supplement to the Seismic Safety Element, March 1985
- (2) City of Pleasanton Emergency Operations Plan, 1984
- (3) City of Pleasanton, Hazardous Materials Storage Permit Ordinance No. 1112, December 1983
- (4) Alameda County Planning Department, Alameda County Airport Land Use Policy Plan, June 1986

TABLE V-1

EARTHQUAKE MAGNITUDE AND INTENSITY*

Richter Magnitude (M)		Modified Mercalli Intensity Scale of 1934
2	I	Not felt except by a very few under especially favorable circumstances.
2	II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
3	III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
4	IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
4	V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
5	VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.

6	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
7	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
7	X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed over banks.
8+	XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
8+	XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.

*Magnitude (M) and intensity (MM) comparison at epicenter (Richter, 1958).

Source: Merrill & Seeley, Inc.

TABLE V-2

SEISMIC PARAMETERS FOR ACTIVE FAULTS

<u>Fault</u>	<u>Distance from Pleasanton (miles)</u>	<u>Maximum Historic Earthquake (M) *</u>	<u>Approximate Intensity in Planning Area (MM) *</u>	<u>Maximum Credible Earthquake (MCE) *</u>
Calaveras	0	6.2**	IV**	7.0
Concord	20	5.4	II-III	6.3
Greenville	11	5.9	VI-VII	6.5
Hayward	9	6.8	VII-VIII	7.0
San Andreas	24	8.3	VII-VIII	8.3

* Source cited in text

** M 6.2 is April 24, 1984 Morgan Hill earthquake. Intensities MM VII to VIII felt in Amador-Livermore Valley during July 3, 1861 earthquake (estimated M 5.6 to 6+) on Calaveras fault with epicenter near Pleasanton Planning Area (Toppozada and others, 1981). The historical record is poor.

GEOLOGIC IMPACTS	ZONES									
	Us	Al	Ah	Ao	G	Ur	Un	C	F	L
Seismic Shaking										
Lateral Spreading										
Differential Settlement										
Lurch Cracking										
Liquefaction										
Surface Fault Rupture										
Bank Failures										
Flooding										
Erosion										
Rock Falls										
Landslides										
Expansive Soils										

Table V-3



DESCRIPTION OF
GEOLOGIC ZONE MAP

ESTIMATED LEVEL OF IMPACT*

- Nil to Low
- Moderate
- Moderate to High
- High

NOTE: see Figure V-3

* Most impacts increase after periods of high rainfall, and/or when water table is high.

TABLE V-4

RISK CLASSIFICATIONS

<u>Class</u>	<u>General Category</u>	<u>General Examples**</u>	<u>Pleasanton Examples</u>
1-A (1,2)	Facilities whose failure might be catastrophic	Nuclear reactors, large dams	Del Valle Dam and General Electric Vallecitos Nuclear Research Center
1-B (1,2)	Facilities whose continuing function is critical	Power plants, power inter-tie systems	San Francisco Water Dept. Aqueducts
2-A (1,2)	Facilities critically needed for services after disaster	Hospitals, fire stations, telephone exchanges	Railroad Ave. Fire Station and others; Medical Facilities (Stoneridge, etc.)
*2-B (2)	Critical transportation links	Regional highways, bridges, rail lines	I-580 and 680, Stanley Blvd., Foothill Rd., Dublin Canyon Rd., overpasses/tunnels
*2-C (2)	Major local utility lines and facilities	Power substations, gas and water mains	PG&E substations, 12&14KV power lines, City of Pleasanton & Zone 7 water transmission lines
2-D (1,2)	Small dams	Small dams	Several on Pleasanton Ridge
*3-A (2)	High occupancy structures	High-rise apartments, hotels, offices, large schools	Hacienda, Meyer, Fromm Business Parks, Amador and Foothill H.S., Compri & Hilton Hotels
*3-B (2)	Facilities highly desirable for shelter after disaster	Schools, churches	Local elementary and middle schools; Local churches

*3-C	Local roads, utilities and communication facilities	Local roads, local utility lines, communication towers	Pleasanton Ridge Tower, local roads and bridges, local utility lines and telephone services
4-A	Medium occupancy structures	Most commercial and industrial buildings, apartments	Downtown, Santa Rita Rd. and Hopyard Rd. commercial buildings
4-B	Low occupancy structures	Single family homes	Single family homes
5-A	Open space lands with intensive development or high intensity occupancy	Recreation areas, vineyards	Castlewood Country Club, Shadow Cliff Park, Old Stony Ridge Vineyard
5-B	Open space lands, no developed areas, low intensity occupancy	Grazing lands, forests	Hillside open space Open fields

* Modified from Woodside General Plan (1976)

** Some of the general examples given in this table are for purposes of illustration only, and are not anticipated in the Pleasanton Planning Area

- (1) Critical facilities for the purposes of hazard avoidance or mitigation
- (2) Exposure of these facilities to hazards poses an unacceptable risk to lives and property (see text)

Source: Merrill & Seeley, Inc.

TABLE V-5

LEVELS OF ACCEPTABLE RISK

General Category of Structure, Occupancy, or Land Use	Population Affected in Event of Failure or Destruction	Acceptable Damage to Facility	Level of Acceptable Risk**
1-A Facilities whose failure might be catastrophic	Vast	None which would result in exposing affected pop- ulation to death or injury	Near Zero
1-B Facilities whose continuing func- tioning is critical	Vast	None which would impair safety of fac- ility or disrupt function	Extremely Low
2-A Facilities critically needed after disaster	Substantial	None which would impair safety of fac- ility or disrupt function	Extremely Low
2-B Critical transportation links	Substantial	Minor non- structural; facility should remain operational and safe, or be susceptible to quick restoration of service	Low
2-C Major local utility lines and facilities	Substantial	Minor non- structural; facility should remain operational and safe, or be susceptible to quick restoration of service	Low
2-D Small dams	Moderate	None which would expose "downstream" population to injury	Extremely Low
3-A High occu- pancy struc- tures (schools, churches)	Varies	No structural damage; minor non-structural damage, but struc- tures should remain safe and usable	Low

3-B	Facilities highly desirable for shelter after disaster	Varies	No structural damage; minor non-structural damage, but structures should remain safe and usable	Low
3-C	Local roads, utilities, communication facilities	Few	Damage should be susceptible to reasonably rapid repair (or utility shut-off)	Moderate
4-A	Medium occupancy structures (commercial buildings)	Moderate	Structural integrity must be retained; (structure should not collapse); damage should not unduly endanger safety of occupants	Low
4-B	Low occupancy structures (single family homes)	Few	Structural integrity must be retained; (structure should not collapse); damage should not unduly endanger safety of occupants	Ordinary
5-A	Open space lands, with intensive development or high intensity occupancy	Varies	Structural integrity must be retained; (structure should not collapse); damage should not unduly endanger safety of occupants	Moderate
5-B	Open space lands, no developed areas, low intensity occupancy	Few	Not applicable	High

* From Woodside General Plan (1976)

** Levels of acceptable risk range from lowest to highest as follows: Near Zero, Extremely Low, Low, Ordinary, Moderate, and High

Source: Merrill & Seeley, Inc.

TABLE V-6
WILDLAND FIRE SEVERITY SCALE

FUEL LOADING	CRITICAL FIRE WEATHER FREQUENCY								
	I			II			III		
	SLOPE %			SLOPE %			SLOPE %		
	0-30	31-50	51+	0-30	31-50	51+	0-30	31-50	51+
LIGHT (Grass)									
MEDIUM (Scrub)									
HEAVY (Woods/ Brushwood)									

MODERATE

HIGH HAZARD

EXTREME HAZARD

SOURCE: State of California, The Resources Agency, Department of Conservation, Division of Forestry, A Fire Hazard Severity Classification System for California's Wildlands, April 1973, p. 20.



The Pleasanton Planning Area is Contained in Fire Weather Frequency Class II.

TABLE V-7

RISK CLASSIFICATION OF BUILDING TYPES
(HIGH LIFE RISK AREAS)

The following is a list used by both the Pleasanton Building Division and Fire Department to classify hazards. Groups are listed in order of declining significance with "A" group presenting the greatest hazard.

<u>Group</u>	<u>Description of Occupancy</u>
A	1-Any assembly building with a stage and an occupant load of 1000 or more in the building.
A	2-Any building or portion of a building having an assembly room with an occupant load of less than 1000 and a stage.
A	2.1-Any building or portion of a building having an assembly room with an occupant load of 300 or more without a stage, including such buildings used for educational purposes and not classed as a Group E or Group B, Division 2 Occupancy.
A	3-Any building or portion of a building having an assembly room with an occupant load of less than 300 without a stage, including such buildings used for educational purposes and not classed as a Group E or Group B, Division 2 Occupancy.
A	4-Stadiums, reviewing stands, and amusement park structures not included within other Group A Occupancies.
E	1-Any building used for educational purposes through the 12th grade by 50 or more persons for more than 12 hours per week or four hours in any one day.
E	2-Any building used for educational purposes through the 12th grade by less than 50 persons for more than 12 hours per week or four hours in any one day.
E	3-Any building used for day care purposes for more than six children.
I	1-Nurseries for full-time care of children under kindergarten age. Hospitals, sanitariums, nursing homes with nonambulatory patients, and similar buildings (each accommodating more than five persons).
I	2-Nursing homes for ambulatory patients, homes for children of kindergarten age or over (each accommodating more than five persons).
I	3-Mental hospitals, mental sanitariums, jails, prisons, reformatories, houses of correction and buildings where personal liberties of inmates are similarly restrained.
H	1-Storage and handling of hazardous and highly inflammable or explosive materials other than flammable liquids.

- H 2-Storage and handling of Class I, II and III flammable liquids as specified in U.B.C. Standard No. 10-1, dry cleaning plants using flammable liquids, paint stores with bulk handling, paint shops and spray painting rooms and shops.
- H 3-Woodworking establishments, planing mills, box factories, buffing rooms for tire rebuilding plants and picking rooms, shops, factories or warehouses where loose combustible fibers or dust are manufactured, processed, generated or stored and pin refinishing rooms.
- H 4-Repair garage.
- H 5-Aircraft repair hangars.
- B 1-Gasoline and service stations, storage garages where no repair work is done except exchange of parts and maintenance requiring no open flame, welding or the use of highly flammable liquids.
- B 2-Wholesale and retail stores, office buildings, drinking and dining establishments having an occupant load of less than 100, printing plants, municipal police and fire stations, factories and workshops using material not highly flammable or combustible, storage and sales rooms for combustible goods, paint stores without bulk handling. Buildings or portions of buildings having rooms used for educational purposes, beyond the 12th grade with less than 50 occupants in any room.
- B 3-Aircraft hangars where no repair work is done except exchange of parts and maintenance requiring no open flame, welding, or the use of highly flammable liquids. Open parking garages.
- B 4-Ice plants, power plants, pumping plants, cold storage, and creameries, factories and workshops using noncombustible and nonexplosive materials. Storage and sales rooms of noncombustible and nonexplosive materials.
- R 1-Hotels and apartment houses. Convents and monasteries (each accommodating more than ten persons).
- R 3-Dwellings and lodging houses.
- M 1-Private garages, carports, sheds and agricultural buildings used as accessories only when not over 1000 square feet in area.
- M 2-Fences over six feet high, tanks and towers.

Source: Uniform Building Code, 1982, Table 5-A, p. 59-61

TABLE V-8

CRITICAL FACILITIES

- 1 Fire Station 1 - 4444 Railroad Street
- 2 Fire Station 2 - 6300 Stoneridge Mall Road
- 3 Fire Station 3 - 3200 Santa Rita Road
- 4 Pleasanton City Hall - 200 Old Bernal Avenue
- 5 Police Department - 4833 Bernal Avenue

Potential Mass Care Facilities:

- 6 Stoneridge Shopping Mall - One Stoneridge Mall Drive
- 7 Meyer Center - Hopyard Road
- 8 Alameda County Fairgrounds - 4501 Pleasanton Avenue
- 9 Castlewood Country Club - Castlewood Drive
- 10 Kaiser Center for Technology - 6177 Sunol Boulevard
- 11 Santa Rita Rehabilitation Center - I-580 at Tassajara Road
- 12 Camp Parks - Dougherty Road
- 13 Veterans Hall - 301 Main Street
- 14 Amador Valley Athletic Club - 7090 Johnson Drive
- 15 Schroebers Racquetball Spa - 5341 Owens Court
- 16 Carpenters Training Center - 2350 Santa Rita Road
- 17 Amador Valley High School - 1155 Santa Rita Road
- 18 Foothill High School - 4375 Foothill Road
- 19 Pleasanton School - 4750 First Street
- 20 Harvest Park School - 4900 Valley Avenue
- 21 Alisal School - 1454 Santa Rita Road
- 22 Fairlands School - 4151 West Las Positas
- 23 Valley View School - 480 Adams Way
- 24 Walnut Grove School - 5199 Black Avenue
- 25 LDS Church - 6101 Valley Avenue
- 26 St. Augustines Church - 900 East Angela
- 27 New Life Fellowship Church - 3200 Hopyard Road
- 28 Kaiser-Permanente Medical Center - 5600 Stoneridge Mall Rd.
- 29 Associates National Bank - 4301, 5, and 9 Hacienda Drive
- 30 Holiday Inn Hotel - 11950 Dublin Canyon Road
- 31 Compri Hotel - 5990 Stoneridge Mall Road
- 32 Hilton Hotel - 7050 Johnson
- 33 Sheraton Inn - 5121 Hopyard Road
- 34 Marriott Hotel - 5059 Hopyard Road

Private and Public Utilities Emergency Resources

Water: Alameda County Flood Control District - Zone 7
601 East Vallecitos Road, Livermore, CA 94550

Sanitation: Dublin/San Ramon Services District
6950 Stoneridge Drive, Pleasanton, CA

Electricity and Gas: Pacific Gas and Electric Company
998 Murrieta Boulevard, Livermore, CA

Telephone: Pacific Telephone and Telegraph Company
4400 Black Avenue, Pleasanton, CA

Petroleum Pipelines: Petroleum Pipelines
135-S Nison Circle, Concord, CA 94520

Emergency Medical Care: Santa Rita Rehabilitation Center, I-580 at Tassajara Road, and various field hospitals.

Media Center: 200 Old Bernal Avenue, includes restrooms, water fountains, conference rooms, telephones, desks, etc.

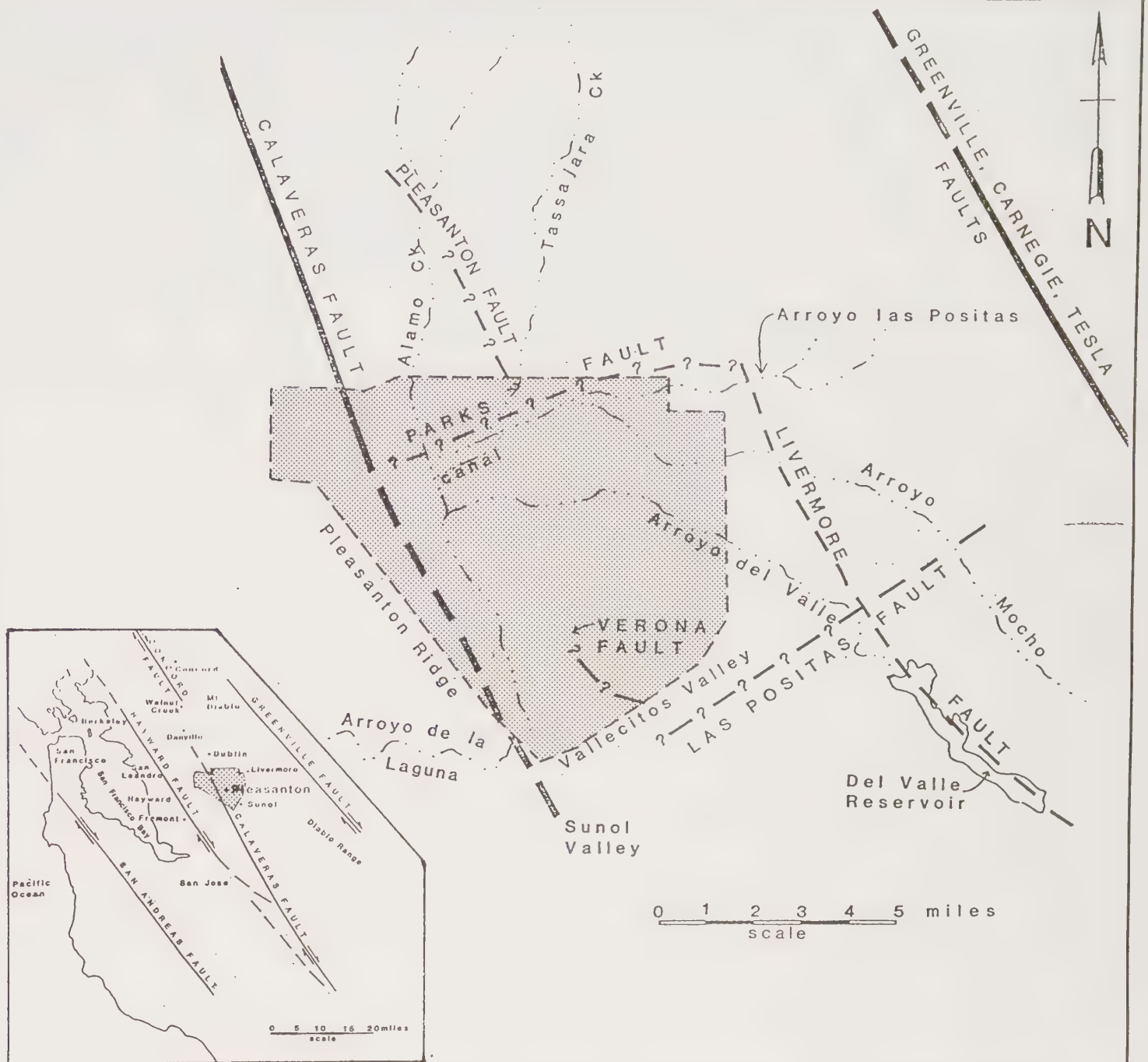


Figure V-1

LOCAL AND REGIONAL FAULTS



- Fault location well established
- - - Fault location not well established
- ? - Existence of fault in doubt
- - - Pleasanton Planning Area boundary



Figure V-2

**SPECIAL STUDIES ZONES
AND LANDSLIDES**



**NOTE: Large scale detailed maps are
available for review at City Hall.**

RELATIVE SUSCEPTIBILITY
TO SEISMIC SHAKING
IN PLANNING AREA

A High--Underlain by thick unconsolidated Quaternary sediments and stream terrace deposits with near-surface ground water table in central part of area. Area decreases in susceptibility to shaking and grades to **B** as deposits thin and increase in age toward valley margin (Plate I). Potential exists for lateral spreading, liquefaction, stream and canal bank failures, and/or differential settlement at shaking intensities MM VII to VIII+.

B Moderate--Underlain by older landslide deposits (Qol, Plate I) and stream terrace deposits. Potential exists for landslides, lateral spreading (on gentle slopes) stream bank failures, and/or lurch cracking at shaking intensities MM VI to VII+.

C Low--Underlain by bedrock and Livermore Gravels (Plate I). Potential exists for landslides transitional to lateral spreading (on gentle slopes) at shaking intensities MM VI to VII+ (Keefer, 1984).

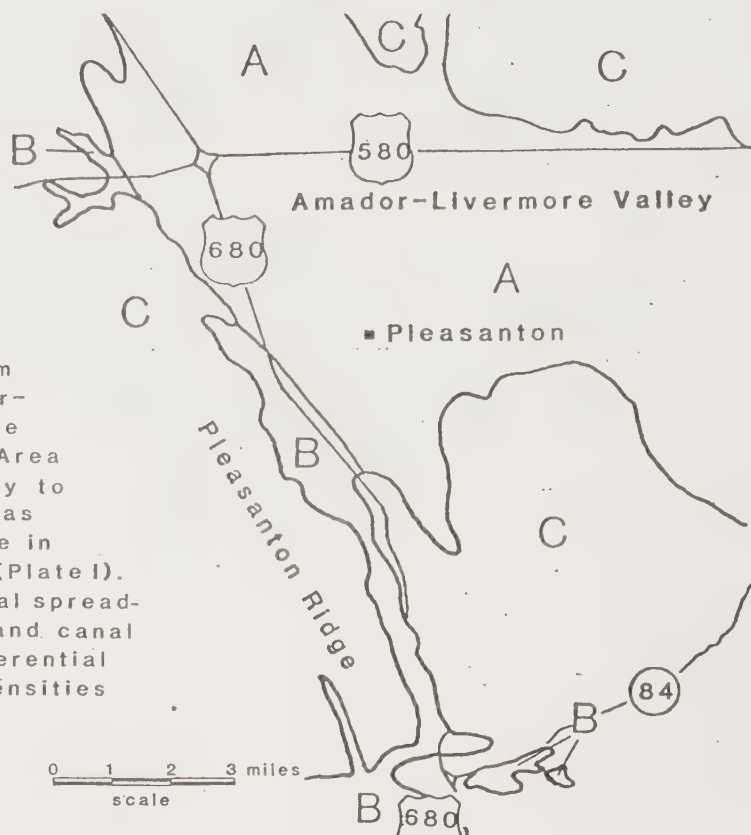


Figure V-4

SUSCEPTIBILITY TO SEISMIC SHAKING



Evaluation of susceptibility based on Borchardt and others (1975), Hays (1980), and the distribution of geologic units (Plate 1).

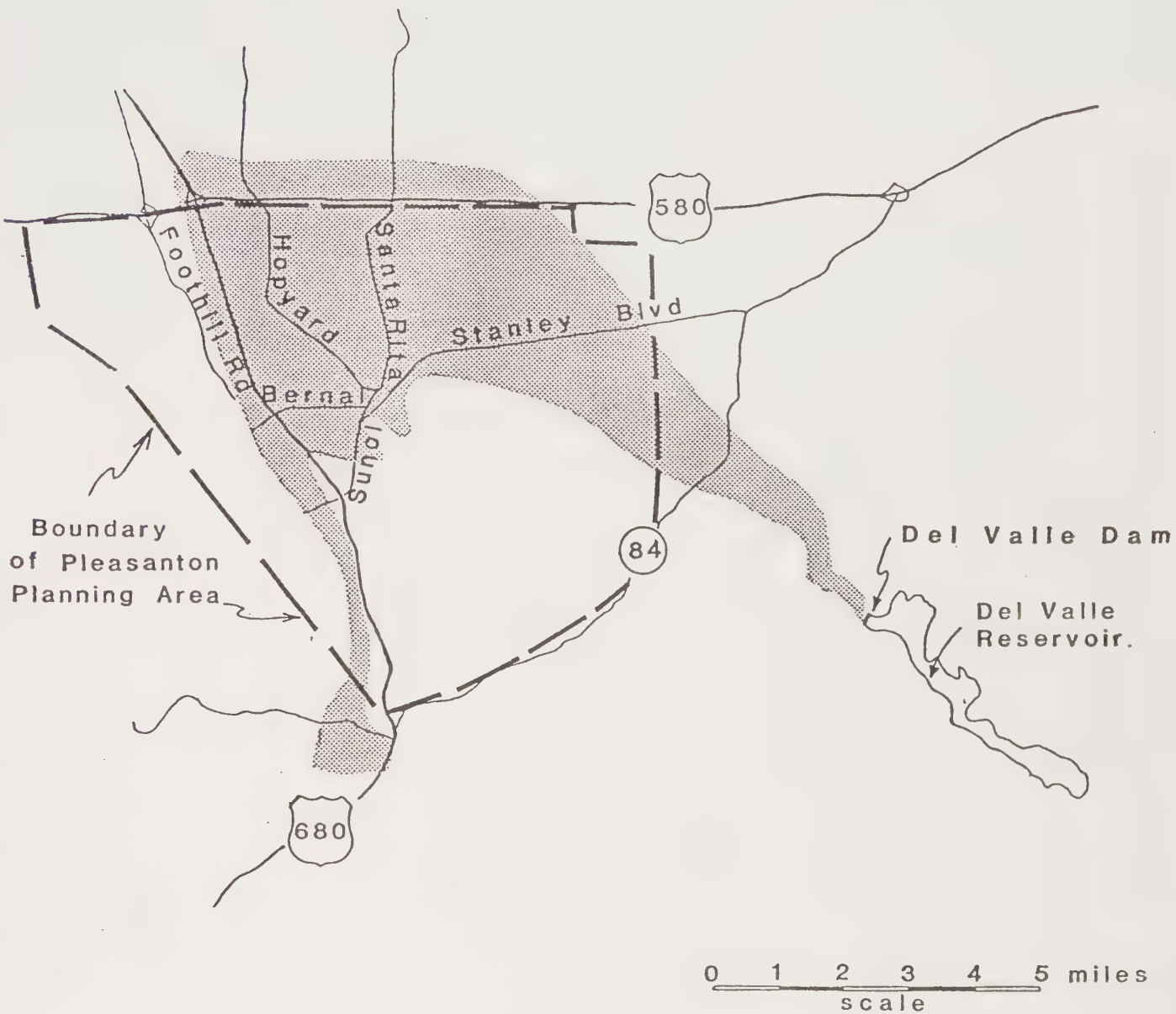


Figure V-6

FLOOD INUNDATION AREA



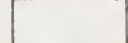


From City of Pleasanton, Emergency Operations Plan (1984)



Figure V-7

WILDLAND FIRE RISK AREAS

- | | |
|---|-----------------|
|  | Extreme Hazard |
|  | High Hazard |
|  | Moderate Hazard |



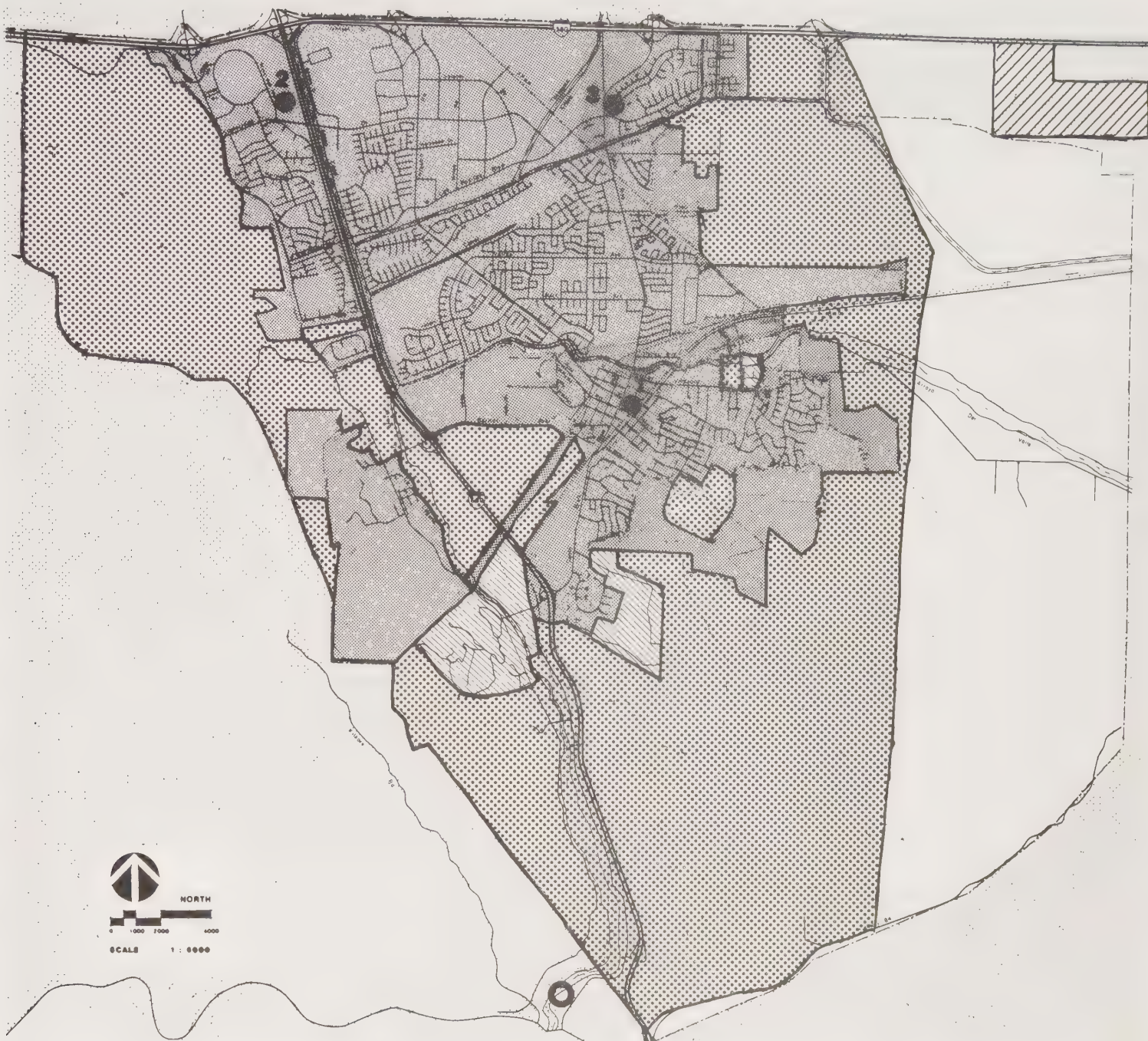
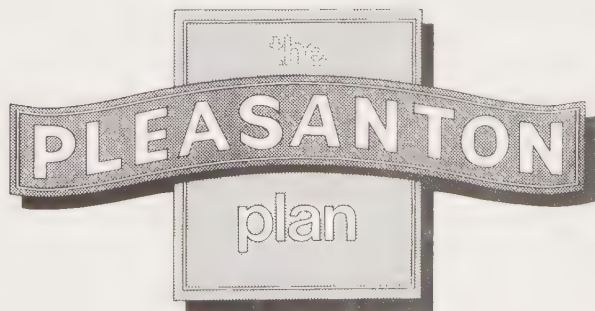










Figure V-8

FIRE PROTECTION JURISDICTIONS



- | | |
|---|---|
|  Pleasanton Fire Department |  County Fire Patrol |
|  Pleasanton Contract Areas |  Livermore Fire Department |
|  Calif. Department of Forestry (CDF) |  Pleasanton Fire Dept. Stations |
|  CDF--Unincorporated Pockets |  Sunol Forest Ranger Station (CDF) |

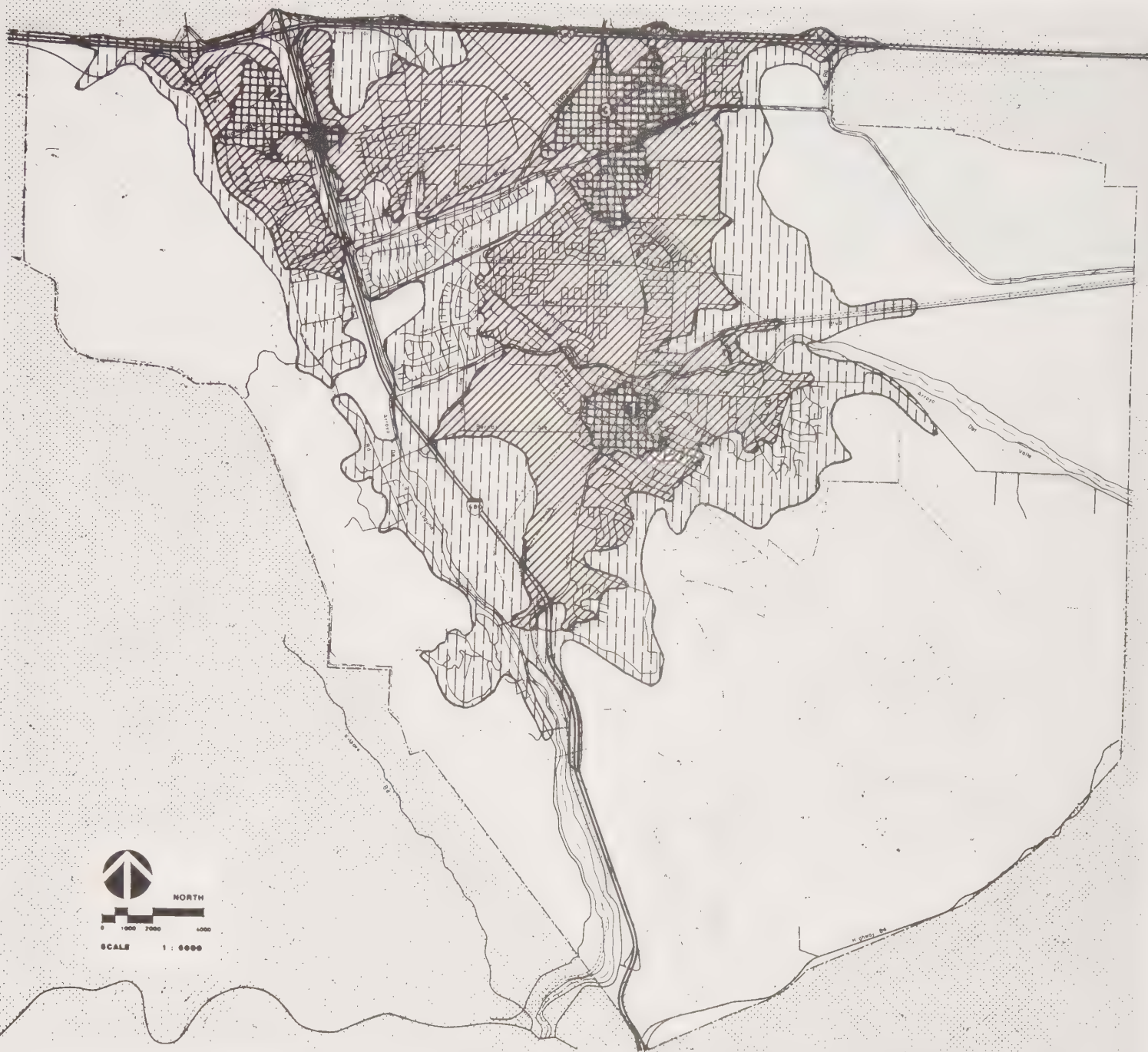
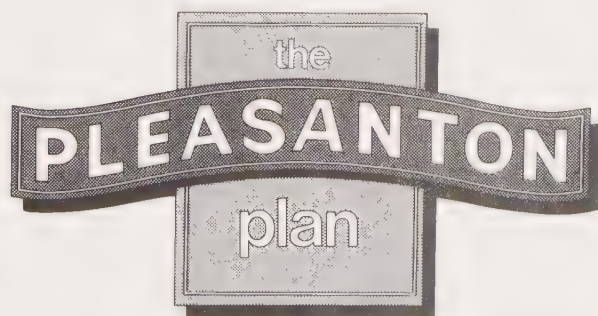







Figure V-9



COMPOSITE RESPONSE TIMES

	1 Minute
	3 Minutes
	5 Minutes
	Beyond 5 Minutes
	Fire Stations

NOTE: Large scale detailed maps are available for review at City Hall.



Figure V-10

100-YEAR FLOOD ZONES

**Areas shown are within
100-year flood zones unless
subject to flood mitigations.**



Source: FEMA, National Flood Insurance Program Maps, 1984

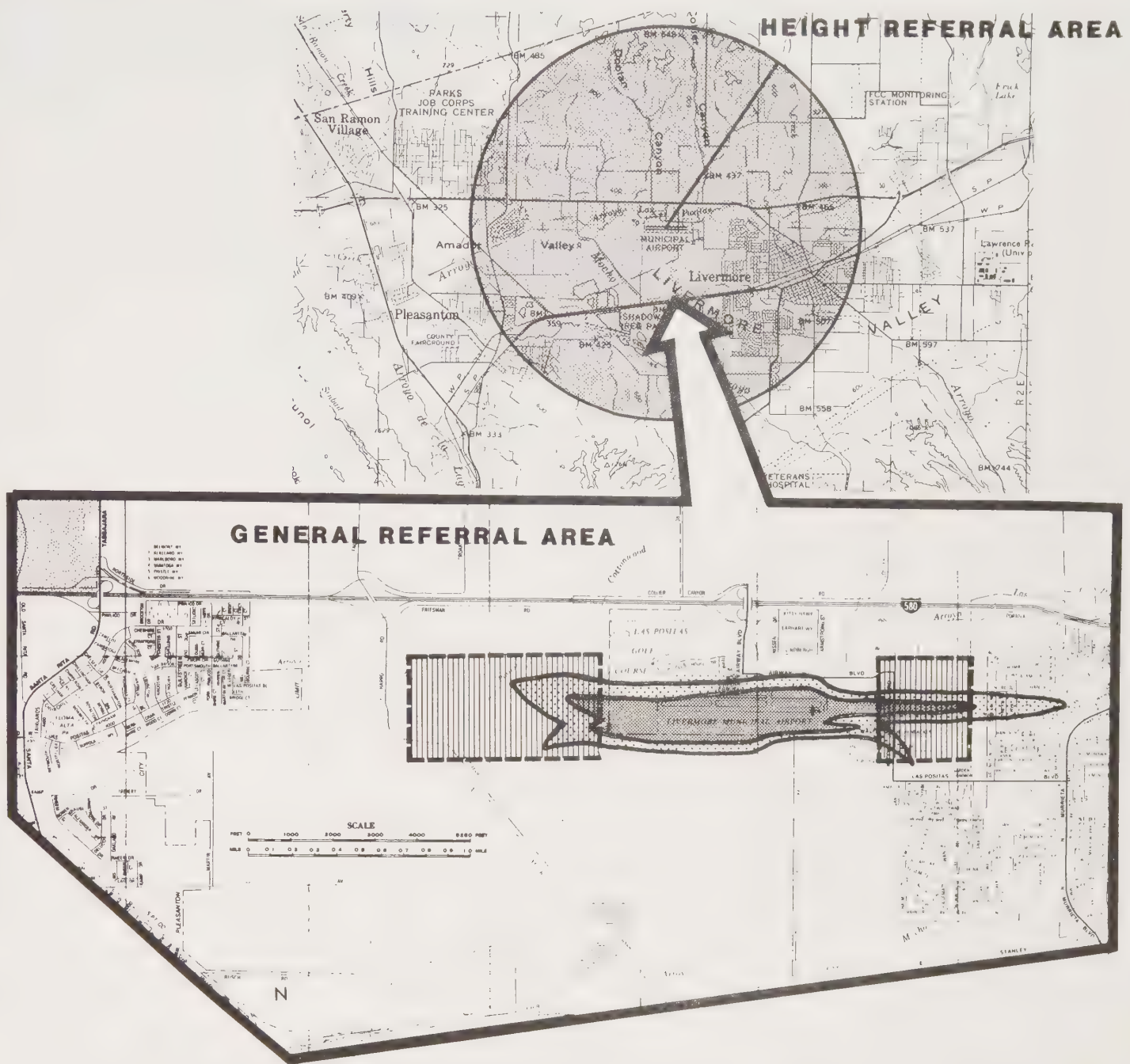


Figure V-11

LIVERMORE AIRPORT REFERRAL AREAS





Figure V-12

CRITICAL FACILITIES



NOTE: see Table V-8

VI. PUBLIC FACILITIES ELEMENT

PURPOSE OF THE PUBLIC FACILITIES ELEMENT

The Public Facilities Element defines the capital improvements and facilities needed to service the community at buildout including wastewater, water, storm drain, flood control, solid waste, gas and electric, schools and other community facilities.

WASTEWATER

Planning for wastewater facilities involves a collection system (gravity pipelines, force mains and pumps), a treatment plant (where raw sewage is treated to meet regional standards), and a disposal system to transport the treated effluent out of the Valley to a discharge point in San Francisco Bay.

Collection System (1) (2)

Ideally, service areas for **wastewater treatment** plants coincide with natural drainage patterns so that gravity can transport wastewater to the plant. Runoff in the Planning Area naturally flows into the Arroyo Mocho, Pleasanton Canal and Arroyo del Valle before flowing into the Arroyo de la Laguna and then southwest from Alameda Creek to San Francisco Bay. Since the abandonment of the treatment plant in south Pleasanton, wastewater must be pumped north to the Dublin San Ramon Services District (DSRSD) treatment plant near I-680.

Pleasanton owns, operates and maintains a wastewater **collection system** within its boundaries totaling about 140 miles and consisting of local and trunk sewer pipes ranging in size from 6 to 27 inches in diameter. There are six trunk sewers and ten pump stations in the system in addition to numerous sewer mains and collectors.

In order to determine the collection system sizing, the amount of wastewater generated by various land uses in the Planning Area has been estimated by using **wastewater coefficients**. The coefficients used are summarized in Table VI-1. Based on the projected wastewater flow at buildout of the General Plan, Pleasanton will require extensive improvements to its existing collection system. These improvements include construction of 40 new sewers, seven diversion structures and modifications to five pump stations costing approximately \$19 million. These improvements do not include in-tract sewers or pipelines smaller than ten inches which are assumed to be paid for by developers of individual projects. The collection system improvements required to accommodate buildout are summarized in Table VI-2 and Figure VI-3.

Treatment Plant (3)

Under contract, Dublin San Ramon Services District (DSRSD) provides wastewater treatment services to the City of Pleasanton. The **DSRSD treatment plant**, located immediately southeast of I-680 and Stoneridge Drive (Figure VI-2) provides primary and secondary treatment.

When wastewater arrives at the DSRSD plant (Figure VI-3), it passes through screens, which remove large floating objects such as rags, sticks and cans. After the wastewater has been screened, it passes through a grit chamber where sand, grit and small stones are allowed to settle and are removed. The wastewater then moves to sedimentation tanks where most of the solids settle to the bottom as raw sludge. The sludge is removed and set aside for further treatment. This phase of sewage treatment is the first or **primary treatment** stage.

Secondary treatment takes the effluent from the sedimentation tanks and transfers it to an aeration tank where it is mixed with air and sludge loaded with bacteria to further break down the organic matter. After several hours, the sludge becomes activated with millions of bacteria and can be used again in the aeration tank where it is mixed with new sewage and air. The resulting water is allowed to settle and chlorinated prior to discharge into the Livermore Amador Valley Water Management Agency (LAVWMA) pipeline for transport to the East Bay Discharger Authority (EBDA) facility where it is dechlorinated and discharged into the outfall system to San Francisco Bay.

The existing DSRSD treatment facility is designed to accommodate 9 million gallons per day (MGD) of wastewater. DSRSD has awarded the contract for the construction of a plant expansion that will increase plant capacity from 9 to 11.5 MGD. This expansion is scheduled for completion by 1988. The City of Pleasanton is presently entitled to 5.347 MGD of the DSRSD's total plant capacity of 9.00 MGD. In January 1984, DSRSD completed a treatment plant master plan that provides staged expansion of treatment facilities to an ultimate capacity of 36 MGD, which would enable buildout of the Pleasanton Planning Area and other areas within the DSRSD service area. The DSRSD plant first would be expanded as much as possible on its present site, then, additional capacity would be provided at the old Camp Parks treatment site.

Disposal System (4,5,6)

The current disposal system is owned and managed by the Livermore Amador Valley Water Management Agency (LAVWMA), a joint powers agency comprised of DSRSD and the Cities of Livermore and Pleasanton. The facilities consist of reservoirs, a pumping station and a pipeline to convey the treated wastewater across Bohemer Summit to the San Francisco Bay. **LAVWMA facilities** connect with the East Bay Dischargers Authority's (EBDA)

interceptor and outfall system for discharge of treated wastewater to the deep waters of the San Francisco Bay.

The pipeline has a current capacity of 16.6 MGD which is being expanded to 21 MGD (4). Pleasanton and DSRSD are currently studying alternatives to increase this export capacity to accommodate development in the Valley to the year 2010 which is estimated to require between 26.0 and 42.0 MGD (5)(6). Such an expansion of LAVWMA's facilities would not be complete until at least 1991.

WATER (9)

The adequacy of Pleasanton's water system depends on the supply of water available and the capacity of storage facilities and distribution systems to deliver water on demand. Water supplies must be capable of meeting maximum day demands; storage must be capable of meeting peak hour demand in addition to fire flow volumes and an emergency reserve; and the distribution system must be able to provide required flows at adequate pressures throughout the system. The Planning Area has been divided into three pressure zones for purposes of analyzing the adequacy of water supply, storage and distribution, as shown in Figure VI-4.

Water Supply

Pleasanton currently obtains about two thirds of its **water supply** from Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7) which, in turn, buys water from the California State Water Project. Zone 7 is a water wholesaler which sells water to Pleasanton who, in turn, acts as a retailer in selling water to its households and businesses. The State Water Project's water is pumped from the Sacramento-San Joaquin Delta, via the California aqueduct, and is conveyed to Livermore via the South Bay Aqueduct, treated at the Patterson Pass and Del Valle Water Treatment Plants and then sent to Pleasanton via the Zone 7 Cross Valley Pipeline. Water from the South Bay Aqueduct and local runoff is stored in the Del Valle Reservoir and used by Zone 7 to replenish groundwater supplies through release in the Arroyo Del Valle. The additional third of Pleasanton's water is obtained from groundwater which the City pumps from three wells, disinfects with chlorine and adds to the City's water system, as shown in Figure VI-4.

Pleasanton's current contract with **Zone 7** allows the City to use a maximum of 3500 acre feet per year (an average of 3.1 Million Gallons per Day) from groundwater with the remainder to be obtained from Zone 7. Zone 7 has projected that it can supply sufficient water supplies to meet the City's future needs assuming that it receives its projected allocation from the State Department of Water Resources through the State's planned Delta water transfer and storage facilities (10). In order to meet future needs, based on buildout of its customers' General Plans, Zone 7 plans to provide additional water treatment and storage

facilities to increase its system capacity from its current 36 MGD, of which Pleasanton currently uses 10.7 MGD, to 87 MGD, of which Pleasanton is scheduled to use 41.7 MGD. Existing and projected water demands are summarized in Table VI-3.

Although Zone 7 is projected to have an adequate supply of water, two **additional pipelines** will need to be built by about 1988 in order to accommodate projected maximum day water demands. Although this deficiency could be overcome by building booster pumps to increase pressure from Zone 7 turnouts, the best solution would be to build a 36 inch pipeline from the Del Valle Water Treatment Plant along the alignment of Vineyard Avenue to a terminus near First Street (the Vineyard Avenue pipeline). In addition, a 24 inch pipeline paralleling the Arroyo Mocho will be needed to connect Santa Rita and Hopyard Roads (the Mocho pipeline). Following construction of these two pipelines, it is anticipated that by 1995 an additional cross valley pipeline will be needed to maintain adequate delivery pressure and to avoid having the City pump water from the Zone 7 system. A summary of these improvements and their scheduled date of construction is contained in Table VI-4 and shown in Figure VI-5.

Water Storage

Water storage reservoirs are used to allow the City's water supply to be delivered at a relatively constant rate over a 24 hour period and to accommodate hourly fluctuations in demand in addition to required fire flows and an emergency reserve. Pleasanton stores its water in nine reservoirs which serve the three pressure zones comprising the Planning Area. These reservoirs include the Foothill reservoir (above Stoneridge Mall), the Kottinger reservoir (above Kottinger Drive), the Bonde reservoir (above Abbie Street), and several smaller tanks located on Pleasanton Ridge. The locations of these storage reservoirs are shown in Figure VI-4.

In order to meet the City's projected storage needs to the year 2010, four **additional reservoirs** will be needed. They include a Sycamore Reservoir, (8 MGD; located in Happy Valley), a Tassajara Reservoir (8 MGD; located north of I-580), a Terminal Reservoir (3 MGD; located near Kottinger Drive), and a Bernal Reservoir (7 MGD; located southwest of Bernal Avenue and Foothill Road). These improvements and their scheduled dates of construction are contained in Table VI-4 and shown in Figure VI-5.

Distribution System

The City's **distribution system** is composed of a system of pipes sized to deliver water at sufficient volumes and pressure to service residential, commercial and industrial users. Under average conditions, water pressure must be maintained at not less than 40 pounds per square inch (psi) nor more than 125 psi at the location of each user. During peak hourly periods, pressure must be at least 30 psi and during periods of major fire demands,

pressure must be at least 20 psi. Water pipes are located under most City streets to service residential, commercial and industrial customers.

Numerous additional water pipes will need to be constructed or improved in order to meet the City's projected water use to the year 2010. Totalling almost five miles in length, these additional pipes should be built as new development occurs. Figure VI-5 illustrates the location of future water system improvements.

Water Quality

Water from the State Water Project is **surface water** which is treated and disinfected by Zone 7. The quality of this water, which comprises about two thirds of Pleasanton's supply, is good although occasional taste and odor problems occur. **Groundwater** taken from the City's wells are lower in quality with total dissolved solids averaging from 400 to 550 milligrams per liter (mg/l). The only customer complaints about water quality arise when an area is shifted from surface water to groundwater or vice versa. The City makes this shift as needed to fully utilize the 3500 acre feet per year groundwater allocation called for in its agreement with Zone 7. There is no convenient or economical way for the City to eliminate this shift in water sources.

STORM DRAINAGE

The local storm drainage system consists mostly of underground pipes, and some natural swales in hilly areas, which carry water runoff from all points within the drainage basin to the flood control channels known locally as **arroyos**. New development is required to install adequately sized storm drains on site which connect to a network of drains under City streets. Most projects within the City have been required to size their storm drains to accommodate major rainfalls, although portions of the storm drain system in the downtown area have experienced overflows during heavy rains. The area along Kottlinger Drive near the Kottlinger Place Senior Center is an example of an older, undersized storm drain which recently overflowed and currently is being investigated for improvements.

In the future, installation of storm drains will continue to be required of new developments and adequately sized to accommodate buildout of the Planning Area. Improvements to the older portions of the storm drain network are scheduled for improvement in periodic increments, as needed, and budgeted in the City's **Capital Improvement Program**.

FLOOD CONTROL

The responsibility for flood control within the Planning Area lies with the Alameda County Flood Control and Water Conservation District, known locally as **Zone 7**. Their responsibilities with

regard to flood control include improving and maintaining existing flood control channels. Most of these channels, the arroyos, have been improved recently in conjunction with new development projects. The Arroyo de la Laguna, south of Bernal Avenue, has not been channelized and supports a distinct riparian corridor. Improvements to this portion of the Arroyo de la Laguna should be designed to retain riparian flora and faunas if possible. Improvements may include selective pruning, use of berms and setbacks or construction of bypass channels. The installation of trapezoidal channels should be considered only as a last resort.

In the future, the City will continue to cooperate with Zone 7 to improve and maintain the flood control system. Areas where **flood control improvements** still need to be made include the confluence of the Arroyo Las Positas and the Arroyo Mocho in the area between El Charro Road and the existing City limits. Other improvements required by full development of the Pleasanton Planning Area are included in Zone 7's Improvement Plan (11) and will be constructed as development requires (Figure VI-6).

SOLID WASTE

The **solid waste** management system in Alameda County includes the process of collecting, processing and disposing of solid waste materials. These materials include waste generated from residential, commercial, industrial, institutional and agricultural uses in addition to construction and demolition materials, wastewater sludge, street sweepings, plant debris, litter and hazardous wastes. In short, the solid waste which must be collected and disposed consists of every material used or consumed by people. A detailed description of solid waste material types and the quantities produced are contained in the Alameda County Solid Waste Management Plan (12).

In Pleasanton, residents and businesses generated a total of 175-200 tons of waste per day. By 2010, Pleasanton is projected to increase its generation of residential waste by 87% and to increase its generation of industrial, commercial and office waste by 200% (13). These projected increases could result in 400 to 500 tons per day of solid waste within Pleasanton. These projected quantities are within the design capacity of the expansion plans for the Pleasanton Solid Waste Transfer Station. The Vasco Road landfill site, in which Pleasanton disposes its non-recyclable waste, accommodated 279,000 tons of materials in 1984.

The City of Pleasanton has a franchise agreement with the Pleasanton Garbage Service to collect solid waste from homes and businesses, transport the materials to the solid waste transfer station on Busch Road, separate **recyclable materials**, and transport the remaining refuse to the sanitary landfill site on Vasco Road.

The transfer station is open 8:00 A.M. to 4:00 P.M. seven days per week and is limited to handling residential, commercial and construction materials. No liquid or hazardous wastes are processed at this site. **Hazardous wastes** are processed and disposed of according to State and Federal regulations. Some hazardous wastes can be processed and reclaimed, some disposed of at sanitary landfill sites, some stored on site in specially designed containers, and some pretreated and discharged into the sewage system.

The **transfer station** includes a mechanical separation system for waste collected by truck and a recycling facility for manual sorting of recyclable materials. Pleasanton Garbage Service also provides large containers throughout the City for the deposit of recyclable materials which are picked up and transported to the transfer station. In 1984, the station handled 307 tons of sorted materials per month. Recyclable materials include aluminum cans (5 tons per month), glass (7 tons per month), metals (22 tons per month), cardboard (80 tons per month) and newsprint (193 tons per month). In 1984, Pleasanton Garbage Service, the operator of the transfer station, paid a total of \$84,233 to various organizations and individuals for recyclable materials.

The transfer station currently is being expanded at its current location to accommodate buildout of the Pleasanton Plan. The City's policies and programs encourage the recycling of materials to reduce the increasing amounts of waste which must be disposed of every year by residents and businesses in Pleasanton.

GAS AND ELECTRIC UTILITIES

Pleasanton is provided with **gas and electric** service by Pacific Gas and Electric (PG&E), a quasi-public agency regulated by the California Public Utilities Commission. Electricity is transported to Pleasanton via 60 kilovolt (kv) **transmission lines** which run from the Radum substation near Stanley Boulevard along the Southern Pacific Railroad tracks and I-580 to the Camp Parks Substation and on to San Ramon. The transmission line is strung above ground from towers along I-580, the Southern Pacific tracks and Stanley Boulevard. The City currently is working with PG&E and Hacienda Business Park to underground these lines along I-580 as part of the City's Specific Plan for this freeway corridor.

With increased development in Pleasanton, demand for electricity has grown significantly, resulting in periodic circuit outages during summer peak periods. In order to accommodate projected demand, PG&E is planning to build a new **substation** on Stanley Boulevard near Shadow Cliffs. Existing 230 kv transmission lines connect PG&E's Newark Substation, travel over Mission Peak and follow Vallecitos Road to the Tesla substation in Livermore. The lines will need to be connected with the proposed substation. PG&E currently is working with the City to establish a route to carry the transmission lines over the southeast hills. The lines

will be carried above ground from Vallecitos Road northward to a transition station somewhere in the southeast hills and then placed underground to the new substation. The City is encouraging PG&E to underground as much of the transmission line as possible to minimize visual impacts on existing and planned residential areas.

Pleasanton is provided with **natural gas** service from a substation in Sunol from which distribution feeder mains transport gas along Foothill and Pleasanton-Sunol Roads. Other distribution feeder mains which bring gas into the Planning Area are located along I-580, Santa Rita Road and Stanley Boulevard. These feeder mains connect with a system of distribution mains which are located throughout the developed portion of the Planning Area. The distribution mains connect to service pipes which connect to individual buildings. PG&E projects needed improvements to this network of natural gas lines using information provided by the City of Pleasanton. Future service consistent with the General Plan is thereby provided by PG&E.

COMMUNITY FACILITIES

One of Pleasanton's major attractions as a community is the quality and diversity of its **community facilities** including schools, parks, recreational facilities and civic buildings. A description of existing community facilities and their locations is included in Table II-5 and Figure II-3 in the Land Use Element. These facilities have been adequate to serve Pleasanton's residents and businesses up until recently when the City has experienced large increases in residential and commercial growth. The City has recently constructed a new police and fire station, has purchased the land for a new corporation yard and has received voter approval to spend Proposition 4 tax revenues for a new **library**, to be located in the Civic Center, a **senior center**, to be located off Sunol Boulevard, and a new **middle school**.

Additional facilities which may be needed in the near future include a gymnasium, municipal golf course, a recreation complex for business park employees, additional community parks, community centers, a YMCA and an expanded City Hall. One possible location for a **gymnasium** is a City owned site between Stoneridge Drive and the Donlon School. The YMCA also is exploring this and other sites for a Tri-Valley facility. The City has designated a 193 acre site west of I-680 and north of Castlewood Country Club for the possible location of a municipal **golf course** on land owned by the City and County of San Francisco. Several major business park developers currently are working with the City to choose a large site and develop financing for a sports field and **recreation complex** in North Pleasanton to serve employees' growing recreational needs. The City is investigating the possibility of locating two new **community parks**, one on Pleasanton Ridge and the other in the southeast hills to meet the expanding recreational needs of the

entire community. Eventually, the City will need a larger **City Hall** which could be incorporated with the new library and police station within the Civic Center complex on Old Bernal Avenue.

Most of these projects will require financing from sources other than City tax revenues and fees. The City hopes to require San Francisco to dedicate the golf course site as part of a larger development plan for their 550 acre holding, although the City will probably need to finance improvement costs. The recreation facility in North Pleasanton will be financed largely through financing mechanisms developed by business parks, although the City probably will need to contribute to some improvements and maintenance costs. Community parks could be financed partially through dedication of land as part of future developments and partially financed by the City's General Fund.

The timing for construction of these facilities is determined by the amount of development and budgeted every year in three year increments in the City's **Capital Improvement Program**.

SCHOOLS

Pleasanton is known for the quality of its **school system** and the General Plan contains policies and programs to ensure their continued excellence. Although schools are an integral part of the quality of life in Pleasanton, school facilities and services are provided by three independent school districts. The Pleasanton Joint School District serves elementary school children in kindergarten through eighth grades, in most of Pleasanton. The Murray School District serves the same age group in the northwest section of Pleasanton and in Dublin. The Amador Valley Joint Union High School District serves high school children in Pleasanton, Dublin and Sunol.

Following a period of declining enrollment and the closure of the Pleasanton Middle School, enrollment has increased in recent years. Recent housing development has diminished available capacity in several schools, as can be seen by the **enrollment and capacity** statistics presented in Table II-6 in the Land Use Element. In order to address the short and long range facility needs of the Pleasanton Joint School District, the Board of Trustees has developed enrollment projections (14) and an evaluation of the effects of future residential growth in Pleasanton on the school district's facilities (15).

The conclusions drawn by these reports include the need for a new **middle school** by the fall of 1987 and a new **elementary school** by the fall of 1990. In addition to these two facilities, the General Plan Map sets aside additional elementary school sites in the Stoneridge Drive corridor and on the San Francisco Water Department lands. The City of Pleasanton School Districts and developers are working on a program to finance the new middle school. The financing of this project will be provided by Proposition B revenues, School District funds and a proposed

school impact fee. The **school impact fee** will be assessed on building permits issued for new housing construction. Although temporary school structures will have to be used in the interim, these improvements will create sufficient school capacity for the efficient operation of **Pleasanton schools** through buildout of the General Plan.

Public Facilities Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

IV. PUBLIC FACILITIES GOALS, POLICIES AND PROGRAMS

Goal 1: To provide adequate **public facilities and services** ultimately to serve those areas within the City's sphere of influence. (GME, Policy 10, p. 8)

Policy 1: **Phase construction** of permanent City sewer, water and storm drainage improvements as a condition of new development to maintain City service standards.

Program 1.1: Coordinate developer financing with the City's Capital Improvement Program to ensure **adequate capacity** for future growth.

Program 1.2: Evaluate infrastructure capacity and needed improvements as part of the City's **Growth Management report**.

Policy 2: Secure **sewage capacity** through all available means for residential, commercial and industrial development. (GME, Policy 4, p. 5; GME, Policy 5, p. 5)

Program 2.1: Require new development to pay its fair share of the City's **planned sewer system** improvements including treatment, distribution and export shown in Table VI-2 and Figure VI-1.

Policy 3: Approve only those **sewage distribution, treatment and export** expansion alternatives which are cost and energy efficient and do not create a health hazard. (IGPRC, Recommendation E-6, p. 65)

Program 3.1: Cooperate with neighboring jurisdictions in evaluating the costs and benefits of a full range of **alternatives** for sewer treatment (5)(6) and export capacity (4) expansion.

Policy 4: Ensure an adequate **water system** for existing and future development and maintain an adequate reserve of water in storage facilities. (IGPRC, Recommendation E-7, p. 66)

Program 4.1: Require new development to pay for its fair share of the City's **water system** master plan improvements as shown in Table VI-4 and Figure VI-4.

Program 4.2: Develop a **contingency plan** for potential water shortages including ground water management and water conservation. (IGPRC, Recommendation E-7, p.66)

Program 4.3: Work with Zone 7 to establish and monitor acceptable ranges of **underground water levels** and recharge when necessary. (IGPRC, Recommendation E-7, p. 66)

Program 4.4: Maintain **water pressure** at not less than 40 pounds per square inch (psi) nor more than 125 psi at the location of each user. Maintain pressure during peak hour periods at 30 psi or greater and 20 psi or greater during periods of major fire demand.

Program 4.5: Require the installation of water conservation devices and **drought tolerant landscaping** in appropriate locations.

Program 4.6: Work with Zone 7 to install **water conservation devices** (16) in model home complexes.

Program 4.7: Work with Zone 7 to develop contingency plans for **supplemental water sources** independent of the State Water Project.

Program 4.8: Evaluate **water supply** as part of the Growth Management report.

Policy 5: Ensure an adequate **storm drainage system** to serve existing and future development.

Program 5.1: Require new development to pay its fair share of the **storm drainage system** improvements.

Policy 6: Ensure an adequate **flood control system** to serve existing and future development.

Program 6.1: Require new development to pay its fair share of the **flood control improvements** included in Zone 7's Master Plan.

Policy 7: Minimize the City's generation of **solid waste materials** by adopting the appropriate policies and programs contained in the Alameda County Solid Waste Management Plan. (OPR, p. 158)

Program 7.1: Encourage **recycling** of paper, glass and metal materials through the

expansion of the Alameda County Solid Waste transfer station (Figure VI-4).

Policy 8: Ensure an adequate **gas and electric system** to serve existing and future needs while minimizing impacts on existing and future residents.

Program 8.1: Work with **PG&E** to design and locate appropriate expansion of the gas and electric system.

Program 8.2: Underground all electrical **transmission and distribution lines** in residential and commercial areas.

Program 8.3: Design the proposed **PG&E substation** in a visually appealing structure and minimize its impact on nearby residential areas.

Policy 9: Provide adequate sites and improvements for a full range of **municipal facilities** to serve existing and future development.

Program 9.1: Require future development to pay its fair share of purchasing **sites** and financing needed **improvements** for existing and future municipal facilities, including a city hall, library, corporation yard, athletic facilities, bus yard, etc.

Policy 10: Provide a high quality of **educational facilities** in Pleasanton.

Program 10.1: Cooperate with the Amador/Pleasanton **Public Schools** to enhance the quality of education, anticipate and construct school facilities before they are needed, and maximize joint use of school buildings, City parks and playgrounds.

Program 10.2: Locate school sites so that most homes are within walking distance to an **elementary school**.

Policy 11: Avoid locating **critical facilities** such as hospitals, schools, fire, police, emergency service facilities and utilities in areas subject to earthquakes or other hazards. (OPR p. 135)

Program 11.1: Continue to review development plans for **critical facilities** according to the guidelines established by the California Environmental Quality Act (CEQA) as amended.

Policy 12: Coordinate future capital improvement expenditures with the City's long-range **capital improvement schedule**. (GME, Policy 26, p. 17)

Program 12.1: Continue to allocate funds in each year's **Capital Improvement Program** according to long-term capital improvement needs.

Program 12.2: Update the City's long-range **capital improvement schedule**, as development needs change over time.

Policy 13: Require **annexation** to the City as a prerequisite to utility extension. (GME, Policy 17, p. 26)

Policy 13.1: Initiate annexation procedures for those parcels within the Pleasanton **sphere of influence** who are able and willing to pay for City services and utility extensions.

Footnotes

- (1) Lowry & Associates, Sewer Master Plan for the City of Pleasanton, January 1986
- (2) Lowry & Associates, Draft Sewer Improvement Requirements for the Proposed Amendment to the Pleasanton General Plan, June 1986
- (3) Brown and Caldwell, Dublin San Ramon Services District Wastewater Treatment Plant Master Plan, January 1984
- (4) CH2M Hill, LAVWMA Export Capacity Expansion Project 21 MGD Final EIR, January 1985
- (5) CH2M Hill, Livermore-Amador Valley Wastewater Management Planning Study, Phase 1, August 1984
- (6) CH2M Hill, Livermore-Amador Valley Wastewater Management Planning Study, Phase 2, August 1985
- (7) San Francisco Bay Regional Water Quality Control Board, Water Quality Control Plan - San Francisco Bay Basin, as amended to July 1982
- (8) Pleasanton Environmental Monitoring Committee, Environmental Monitoring Committee Year End Report, October 1985
- (9) More detailed information on water facilities is contained in Camp, Dresser & McKee, Water Master Plan for the City of Pleasanton, November 1985
- (10) Alameda County Flood Control and Water Conservation District Zone 7, 1985 Planning Update - Water Program, September 1985
- (11) Alameda County Flood Control and Water Conservation District, Zone 7 Project Flood Control and Storm Drainage Improvements, June 1960
- (12) Brown and Caldwell, Alameda County Solid Waste Management Plan, November 1980
- (13) Pleasanton Garbage Service, Application for Facility Permit/Waste Discharge, May 1986
- (14) Pleasanton Joint School District, Amador-Pleasanton Public Schools Five Year Enrollment Projections for 1986-1990, November 1985
- (15) Pleasanton Joint School District, Projected City Growth and its Impact on the School Districts, January 1986
- (16) ACFCWCD Zone 7, Water Conservation, September 1983

TABLE VI-1

SEWAGE COEFFICIENTS

<u>Description</u>	<u>Flow Coefficient</u>
Residential - existing	250 GPD/DU
Residential - new	220 GPD/DU
Residential - high density	145 GPD/DU
Institutional	2,000 GPAD
Commercial	200 GPD/1,000 S.F.
General Industrial	210 GPD/1,000 S.F.
Office	100 GPD/1,000 S.F.
Inflow/Infiltration- new development	300 GPAD
Inflow/Infiltration- existing development	500 GPAD

Source: Lowry & Associates, Sewer Master Plan for the City of Pleasanton, January 1986

TABLE VI-2
SEWER SYSTEM IMPROVEMENT PROGRAM

New Pipe Number	Description	Size (in)	Length (ft)	Unit Cost \$/ft	Project Cost (\$)
=====					
288	Parallel to 236	8	623	95	59,000
287	Parallel to 234	8	855	95	81,000
280	Parallel to 232	8	1250	95	119,000
278	Parallel to 230	8	1250	95	119,000
286	Parallel to 224	12	1550	112	174,000
285	Parallel to 222	15	1280	134	172,000
395	Parallel to 378	8	1950	95	185,000
394	Parallel to 376	12	1672	112	187,000
393	Parallel to 348	8	915	95	87,000
397	Parallel to 344	10	700	101	71,000
396	Parallel to 342	10	900	101	91,000
392	Parallel to 308	8	395	95	38,000
390	Parallel to 302	12	4600	112	515,000
598	Parallel to 540 & 538	12	2650	112	297,000
597	Parallel to 536 & 524	15	1300	134	174,000
694	Parallel to 606	12	1430	112	160,000
692	Parallel to 604	12	680	112	76,000
690	Parallel to 602	12	600	112	67,000
399	Parallel to 326	12	2060	112	231,000
398	Parallel to 324	12	2435	112	273,000
299	PS-2 to PS-1	18	2000	158	336,000
298	PS-1 to Harvest & Black	24	3500	197	690,000
297	Parallel to 246	24	1000	197	197,000
296	Parallel to 244	24	650	197	128,000
295	Parallel to 242	24	1070	197	211,000
294	Parallel to 220	24	300	197	59,000
293	Parallel to 218	24	985	197	194,000
292	Parallel to 210	24	1780	197	351,000
291	Parallel to 208	24	1380	197	272,000
290	Parallel to 206	24	400	197	79,000
289	Parallel to 204	24	1670	197	329,000
899	Parallel to 808	18	1030	158	163,000
898	Parallel to 806	18	600	158	95,000
897	Parallel to 804	18	1550	158	245,000
896	Parallel to 802	18	835	158	132,000
894	Parallel to 820	21	1900	177	336,000
893	Parallel to 801	10	765	101	77,000
892	Parallel to 818	12	118	112	13,000
---	Connect 906 to PS-8	6"SIPHON	300	190	57,000
699	Parallel to 608 & 610	15	3470	134	465,000
DIVERSION STRUCTURES					
820					10,000
808					10,000
610					10,000
310					10,000
606					10,000
801					10,000
901					10,000
PUMP STATIONS					
PS-4					240,000
PS-5					420,000
PS-6					1,800,000
PS-7					400,000
PS-8					1,900,000
SUBTOTAL					12,435,000
EXTENSIONS					
Bonita		10	3500	101	354,000
Vineyard/Arroyo Del Valle		18	3000	158	474,000
Sunol Pump Station					425,000
Sunol Force Main	8FM		5000	60	300,000
Sunol Gravity Sewer	12		2700	112	302,000
Laguna Pump Station					430,000
Laguna Force Main	8FM		8000	60	480,000
Laguna Gravity Sewer	12		1000	112	112,000
Castlewood Pump Station					600,000
Castlewood Force Main	8FM		4000	60	240,000
East Amador Relief Sewer					3,237,000 1)
SUBTOTAL					\$6,954,000
TOTAL					\$19,389,000

1) Portion of East Amador Relief Sewer not yet constructed. Includes construction cost of sewer from West Las Positas to Santa Rita Road to be constructed in the near future. Estimated cost \$498,000.

NOTE: See Figure VI-1.

TABLE VI-3
MAXIMUM DAY WATER DEMANDS

	1984			2010		
	Total Water Demand (MGD)	Zone 7 Prod. (MGD)	Well Prod. (MGD)	Total Water Demand (MGD)	Zone 7 Prod. (MGD)	Well Prod. (MGD)
Pleasanton	16.4(1)	10.7(7)	5.7(8)	47.4	41.7(9)	5.7(1)
Livermore	18.4(3)	13.2	5.2(4)	35.0(5)	29.8	5.2(4)
Dublin	6.0(3)	6.0(3)	0	16.5(6)	16.5	0
TOTALS	40.8	29.9(2)	10.9	98.9	88.0	10.9

- (1) Pleasanton Production Records
- (2) Zone 7 Production Records
- (3) Estimate from Population Figures
- (4) Estimate from California Water Service Company
- (5) Estimate from ABAG Population Projection
- (6) Estimate from DSRSD Population Projection
- (7) Maximum delivery by Zone 7 to Pleasanton during 1984. Did not occur on the same day as the 16.4 MGD total water demand.
- (8) $16.4 - 10.7 = 5.7$
- (9) $47.4 - 5.7 = 41.7$

Source: Camp, Dresser & McKee, Water Master Plan for the City of Pleasanton, November 1985

TABLE VI-4

WATER SYSTEM IMPROVEMENT PROGRAM

Year of Improvement	Zone 7 Improvements	City Reservoirs	Piping, Pumps and Other
1986	Turnout 5		*500 feet of pipe parallel to #601 *Backup power for wells *Fluoridation at Turnouts 3 & 4
1987 1988	Vineyard Pipeline	Sycamore Tassajara	*All other piping and pumping identified herein should be installed as land development and street improvements occur
1989 1994	Mocho Pipeline	Terminal Reservoir for Vineyard Pipeline	
1995			*New Cross Valley Pipeline or pumping from Zone 7 turnouts
1998		Bernal	

Note: See Figure VI-5

Source: Camp, Dresser & McKee, Water Master Plan for the City of Pleasanton, November 1985

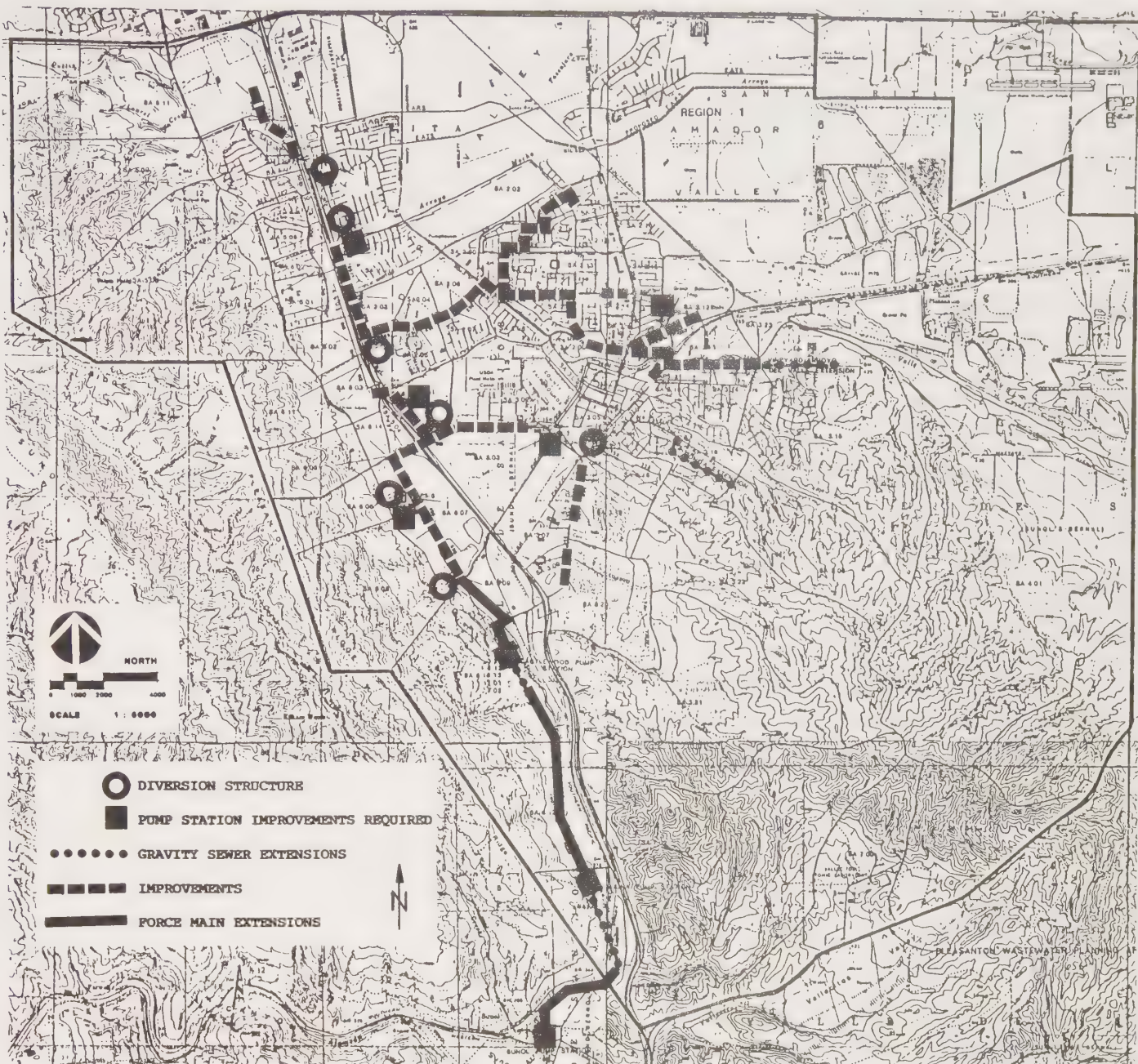


Figure VI-1

Sewer System Improvements



**NOTE: Large scale detailed maps
are available for review at City Hall.**



Figure VI-2

**SEWAGE TREATMENT
AND EXPORT SYSTEM**



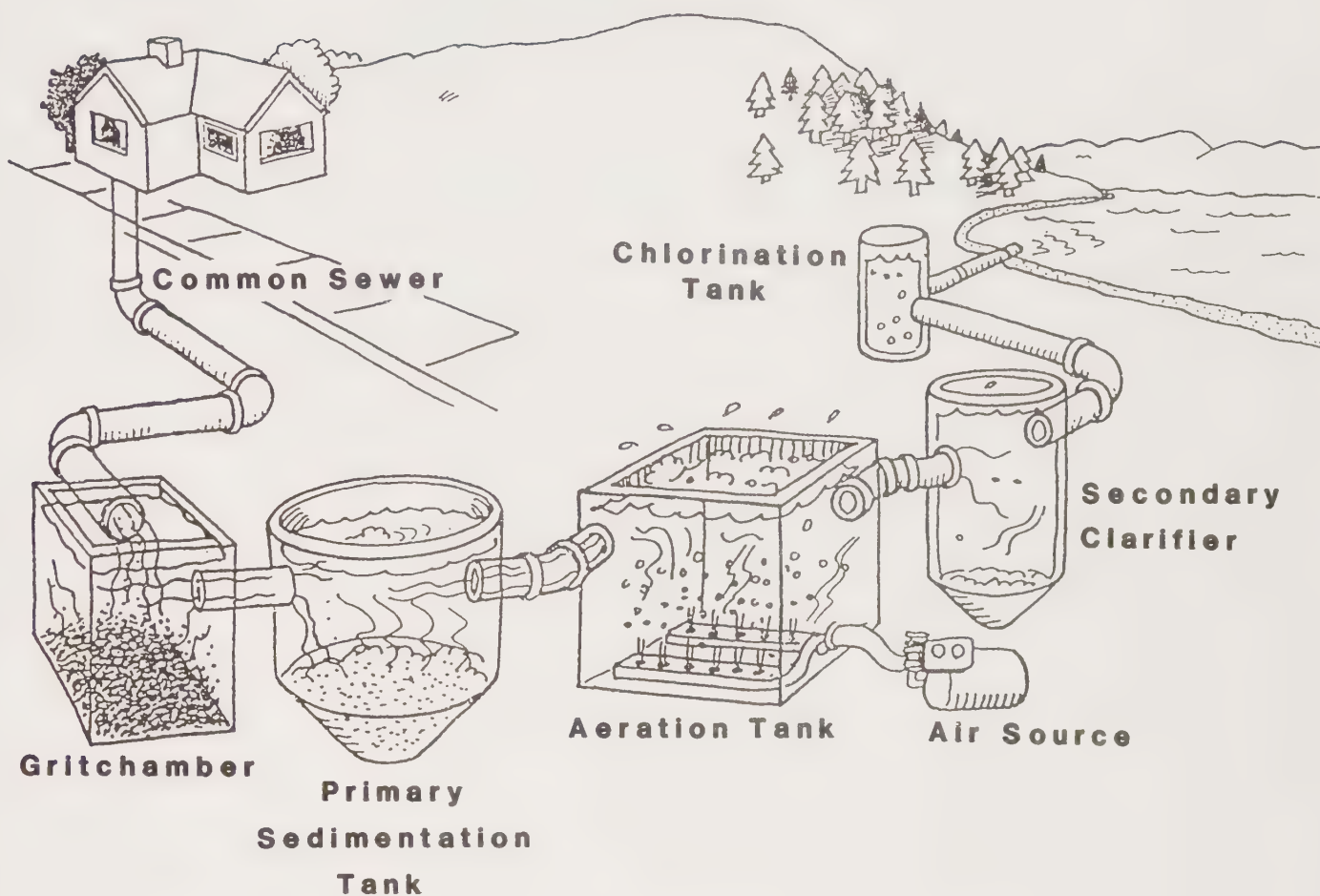


Figure VI-3

SEWAGE TREATMENT PROCESS



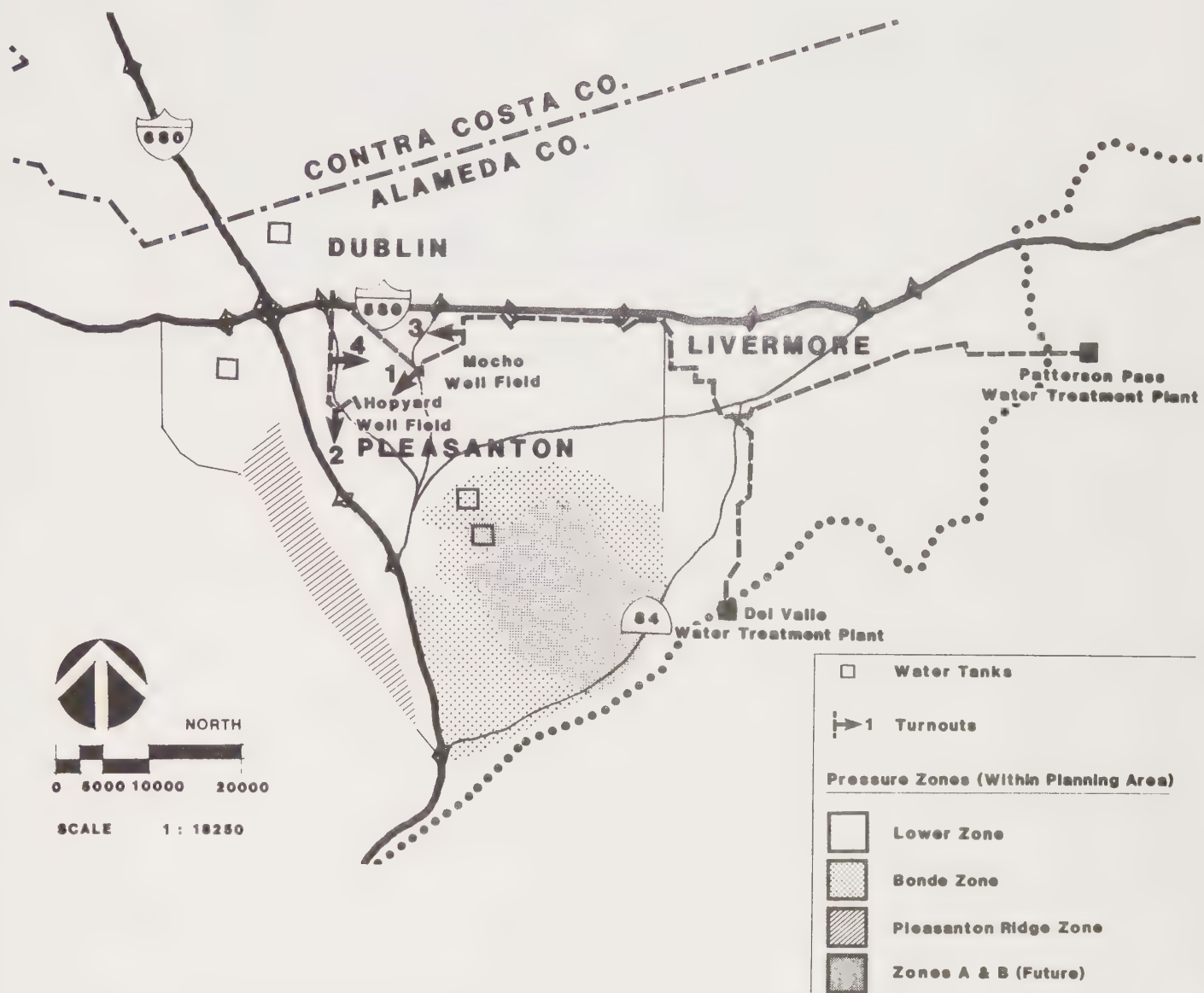


Figure VI-4

**EXISTING WATER SYSTEM
AND PRESSURE ZONES**



----- **Water Trans Pipeline**
 **South Bay Aqueduct**

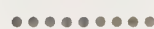


Figure VI-5

WATER SYSTEM IMPROVEMENTS



Proposed Reservoir



Proposed Pipe

NOTE: Large scale detailed maps are available for review at City Hall.





Figure VI-6

FLOOD CONTROL IMPROVEMENTS

----- Proposed Flood Control Improvements

NOTE: Large scale detailed maps are available for review at City Hall.



VII. CONSERVATION AND OPEN SPACE ELEMENT

PURPOSE OF THE CONSERVATION AND OPEN SPACE ELEMENT

The objective of the Conservation and Open Space Element is to conserve and manage natural resource and open space areas for the preservation and production of resources, the promotion of outdoor recreation and the protection of public health and safety. The Conservation and Open Space Element includes goals, policies and programs which serve as an action program to implement these objectives.

INVENTORY OF EXISTING RESOURCES

More than half of the land within the Planning Area is designated for some type of natural resource or open space use. These lands can be divided into the following four categories.

Open Space Land Used to Preserve Natural and Man-Made Resources

Due to the activities of man and domesticated animals, very little natural vegetation remains within the Planning Area. The greatest concentration of **native plant life** is found along the eastern slopes of Pleasanton and Main Ridges and includes grassland, brushland and woodland areas. The types of plant and animal life found in the Planning Area are summarized in Table VII-1 and their locations are shown in Figure VII-4.

On the lower slopes of these ridges, **grasslands** have replaced natural vegetation to allow grazing activity. These grasses include wild oat, foxtail, various brome grasses, and perennial grasses such as Italian Rye and needle grass. In addition to these grasses, a number of naturalized herb species are found on the ridges including mustards, milk and bull thistle, sweet fennel and wild radish. After winter rains, the grasslands become dotted with the blossoms of indigenous plants such as the California buttercup, California poppy and fuchsia.

Brushland vegetation is found in small patches on the sides and crests of the ridges and near the bottoms of ravines and creeks. Common shrubs found in these areas include coyote brush, bush monkey flower, poison oak, California sagebrush and coffee berry. A higher percentage of these plants are indigenous to California than are plants in grassland areas.

Woodlands cover nearly the entire upper half of the ridges and extend along stream channels and into the grassland areas of the lower slopes, as can be seen from many points in Pleasanton. Trees in these areas are predominately of the oak, or "quercus," genus and include coast live oak, valley oak, black oak and blue

oak. California laurel, big leaf maple and California buckeye can be found scattered among the oaks. A number of shrubs, herbs and grasses also can be found in these woodland areas.

Trees over 55 inches in circumference or 35 feet in height are considered "Heritage Trees" in Pleasanton and are subject to special regulations (1) governing their removal. Most of these trees within the Planning Area are found on Pleasanton Ridge, the Southeast Hills, along the western stretch of Bernal Avenue, on the former Meadowlark Dairy, and in the Mohr-Martin neighborhood. The most common of these trees include Valley Oak, Monterey Pine, California Black Walnut, Eucalyptus, Black Locust and California Box Elder.

Native plants in any significant amount can be found only in three other parts of the Planning Area, the Southeast Hills, the Arroyo del Valle and the Arroyo de la Laguna. The same species of oak and grasses found on the ridges also dominate in the Southeast Hills. Native vegetation in the arroyos consists mainly of willow, cottonwood and sycamore trees; coyote brush, snowberry, elderberry, poison oak, tree tobacco, wild blackberry, wild rose and many of the same types of exotic grasses found on the hillsides.

Vegetation plays a number of important roles in the preservation of natural resources including erosion and climate control, reduction of surface water runoff, soil enrichment, air quality improvement, provision of food for human and animal life, shelter for wildlife, and the provision of visually attractive landscaping.

Native fauna generally inhabit areas of undisturbed plant life such as Pleasanton and Main Ridges, the Arroyo del Valle, Arroyo de la Laguna and the Southeast Hills. Such mammals as raccoons and opossums can be found predominately along the arroyos; deer and badgers are confined mainly to the hillsides; and foxes, coyotes, moles, gophers, skunks, rabbits, squirrels and mice can be found in both hilly and flat land. An occasional mountain lion, the only endangered mammal in the Planning Area, can be found along with bobcats in steeper terrain, especially the Southeast Hills.

Approximately 140 species of **birds** either inhabit or forage in the Planning Area. Three of these birds, the golden eagle, bald eagle and osprey are on the endangered species list while the white tailed kite is becoming increasingly rare. The Planning Area also contains an endangered reptile, the Alameda striped racer - a small snake, which can be found on hillsides and flatlands.

These natural resources are found predominantly in areas 1, 2, 3, 4 and 5 on Figure VII-4. More than 80% of these areas are designated as Public Health and Safety on the General Plan Map. Approximately 8,400 acres, or 30% of the Planning Area is

designated in this Open Space category, as discussed later in this element.

Several **historic buildings** in Pleasanton constitute a significant man made resource and symbolize the City's early development. As shown in Table VII-2 and Figure VII-5, Pleasanton's oldest structure is the Alviso Adobe which dates from 1844 and is located on the east side of Foothill Road, just north of Bernal Avenue. The City has designated a three acre parcel surrounding the adobe for use as an historical park when the surrounding property is developed. The two other **adobe structures** in Pleasanton, the Kottinger Barn and Bernal Adobe, recently have been and are planned to be, respectively, restored. Most of the other historic buildings dating from the 19th century are located in the downtown area. The notable exceptions are the Century House, on Santa Rita Road, and the Mohr House, currently located at the north end of Martin Avenue. These buildings are irreplaceable and, taken as a whole, convey the architectural heritage of the Amador Valley.

The City has taken major steps toward the protection of architecturally significant buildings and has inventoried all significant structures in the downtown area (2), adopted design guidelines which encourage preservation and sensitive improvements to Downtown buildings (3) and designated the entire Downtown as a specific plan area for further study of historic preservation and other issues.

Open Space Land Used for the Production of Resources

Soils are a natural resource which contribute to the production of sand and gravel, the viability of agriculture and grazing activities, and the recharge of ground water. The location of various soil types are shown in Figure VII-1 and described and interpreted in detail by the U.S. Soil Conservation Service (4).

About 3,100 acres of land are designated on the General Plan Map for **sand and gravel harvesting**. Virtually all of this land lies east of Martin Avenue and north of the Arroyo Del Valle. The Planning Area contains the largest single concentration of sand and gravel deposits in the entire Bay Area. Approximately half of this land has been or is in the process of being mined, with the remainder expected to last for another 30 to 50 years. The California Division of Mines and Geology has described the quantity and quality of this aggregate in great detail and has designated this land as an "Aggregate Resource Area of Regional Significance" (5). This designation notifies the City to identify these areas, assist in their management and promote the conservation and development of this construction grade aggregate in its General Plan. Figure VII-2 shows the location of these lands, all of which are owned by sand and gravel companies and are designated for Sand and Gravel Harvesting or Open Space use on the General Plan Map. One exception (Parcel A-3) is not owned by the sand and gravel companies and is not economically viable

for harvesting. Therefore, the Pleasanton Plan designates this parcel for public and residential uses. Another exception is the Ruby Hills area which is currently used and planned for agriculture. Such a use does not preclude sand and gravel harvesting, if it's needed, in the future. Future harvesting and reclamation activities are regulated by the Alameda County **Reclamation Plan** (6).

Livestock grazing contributes to resource production in the Southeast Hills and some portions of Pleasanton Ridge. Although livestock grazing remains a viable activity in these areas, it becomes less profitable each year as increasing land values and property taxes exert pressure on ranchers to sell their land for more profitable use. Most of the land in the Southeast Hills which is designated as Public Health and Safety is used for the grazing of livestock.

Agriculture also remains a production activity, the viability of which is decreasing over time. Once a predominately agricultural area, Pleasanton is gradually losing agricultural land as it is converted to urban uses. Current production of alfalfa on San Francisco Water Department lands (550 acres) may be extended given the City's designation of this area as an urban reserve, not to be developed for ten years. The grape vines on the Wente property in the Ruby Hills area (900 acres) southeast of town are being replanted to restore this area to its former use as a vineyard. An agricultural area surrounding the GE Vallecitos Center (300 acres) is used mostly for grazing and serves as a buffer surrounding the facility. A detailed discussion of agriculture and grazing in the Bay Area is contained in a recent study by People for Open Space (7).

Groundwater recharge, although not a land use shown on the General Plan Map, is a vital component of natural resource production. The Arroyo de la Laguna as well as the Arroyo del Valle act as groundwater recharge areas. These areas are designated for open space uses on the General Plan Map.

Pleasanton lies within the **Alameda Creek watershed**, a drainage basin of some 675 square miles lying between Mt. Hamilton and Mt. Diablo. Alameda Creek, the principal stream, flows northeast from its origin on Mt. Hamilton until it meets the Arroyo de la Laguna near Sunol and then runs west through Niles Canyon to San Francisco Bay. The Arroyo de la Laguna collects the surface water runoff from the Amador-Livermore Valley and carries it south to Alameda Creek. Although all of the creeks feeding the Arroyo de la Laguna are naturally seasonal, Zone 7 releases controlled amounts of stored water from the Del Valle reservoir and imported water from the South Bay Aqueduct into these creeks in order to recharge the groundwater basin which underlies the Planning Area.

The groundwater basin consists of several **aquifers** which are layers of water bearing gravels separated by impenetrable layers

of clay. Sand and gravel operations are only allowed to penetrate the upper aquifer, protecting the water quality of the lower aquifers for domestic wells. The greatest amount of groundwater is found directly under the flat portions of the Planning Area. The location of water resources in the Planning Area is shown in Figure VII-3.

Open Space Land Used for Outdoor Recreation

Pleasanton's park system consists of 22 **neighborhood parks**, totaling 109 acres and 11 **community parks**, totaling 763 acres, as shown in Figure II-7 of the Land Use Element. Of the 872 acres allocated for these park uses on the General Plan Map, about 248 acres, or 28%, are improved for existing park uses. The remaining acres are being preserved for future park use. Pleasanton currently provides about 5.5 acres of improved neighborhood and community parks per 1,000 population, slightly above the national standard of 5 acres per 1,000. The General Plan provides sufficient acreage of neighborhood and community parks, excluding the 300 acres along the Arroyo de la Laguna and Pleasanton Ridge, (572 acres) to increase this ratio to 7.7 based on a buildout population of 74,000 as shown in Table II-7 in the Land Use Element.

In addition to neighborhood and community parks, the Planning Area contains one **regional park**. The 249 acre Shadow Cliffs Regional Recreation Area contains aquatic, hiking and cooking facilities and attracts people from all over the Valley. The facility is owned and operated by the East Bay Regional Park District. Shadow Cliffs is an integral part of the East Bay park system called for in the East Bay Regional Park District Master Plan (8).

Two other recreational facilities are shown on the General Plan Map but are not designated as Parks and Recreation. The General Plan Map shows a system of riding and **hiking trails** along the Arroyo Mocho, Arroyo del Valle, Arroyo de la Laguna and extending into the Southeast Hills and onto Pleasanton Ridge. These trails, although not improved, hold the potential for walking and bicycling throughout the undeveloped portions of the Planning Area. The feasibility of using those trails shown along the arroyos is detailed in a study conducted by Zone 7 (9) which owns the rights-of-way in these corridors.

The Alameda **County Fairgrounds** is a 266 acre facility, shown as Public and Institutional on the General Plan Map, which provides recreational facilities for use by residents throughout Alameda County. The fairgrounds contain a nine hole golf course, race track, tennis courts, lawn bowling, miniature golf, amphitheatre, picnic and meeting facilities, most of which can be used year round. The fairgrounds are used most intensively during two weeks in June and July for the County Fair which attracts thousands of people from around the State. The fairgrounds is owned by Alameda County and operated by a non-profit organization

which has developed a long range master plan for the site, including a number of new recreational facilities (10).

The undeveloped area designated as Parks and Recreation on the General Plan Map and located south of Castlewood Country Club, between Foothill Road and I-680, is used primarily as a railroad and flood control corridor. It does provide a **scenic resource** along I-680 as well as being a riparian corridor containing indigenous plants and animals. Two potential pathways are shown along this linear park following the Arroyo de la Laguna and the Western Pacific Railroad tracks, both of which potentially could be used for recreational purposes.

Several other scenic areas within the Planning Area also contribute to outdoor recreation and are designated as Open Space on the General Plan Map, as discussed in the following section.

Open Space Land Used for Public Health and Safety

About 8400 acres, or 30% of the Planning Area, is designated for Public Health and Safety and is categorized as Open Space in the General Plan. These lands are found on Pleasanton Ridge and in the Southeast Hills. They are designated as open space to discourage development because of a variety of natural and man made hazards and constraints. Most of this land is underlain by landslide deposits and is prone to soil and seismic instability, as discussed in the Public Safety Element. Most of these areas also consist of hilly and steep terrain which exceed 25% in slope. In addition, many of these areas are difficult to provide with City services such as sewage disposal and fire protection and, therefore, are excluded from developable land use designations. Protection of these areas also provides valley residents with a **scenic resource** which contributes to the visual identity of the community.

Flood plains along the arroyos are designated as Public Health and Safety as are narrow strips of land adjacent to I-680 and the railroad tracks. These areas are intended to protect future development from hazards due to floods, traffic noise and railroad operations, respectively. The strips along I-680 also supplement other open space areas which provide a visual buffer along this **scenic highway** as described in City guidelines (11). A similar strip separates the Mohr-Martin residential neighborhood from the sand and gravel quarries planned for harvesting in the future. A semi-circular strip on the slopes of Mission Hill, near the intersection of Bernal Avenue and Sunol Boulevard, is intended to preserve the steep slopes below the Pleasanton Hills neighborhood. Finally, a circular shaped piece of Public Health and Safety is designated on the hill bisected by I-680, northeast of Castlewood Country Club, because of its steep terrain and its location adjacent to the freeway.

DESCRIPTION OF FUTURE PLANS AND PROGRAMS (12)

Open Space Land Used to Preserve Natural and Man-Made Resources

The Public Health & Safety designation on the General Plan Map preserves as Open Space nearly all areas which contain natural resources worthy of protection including wildlife habitats, stream beds and channels, and areas of significant vegetation. All areas are protected by the City's Heritage Tree Ordinance.

As the City considers expansion into the **Expanded Planning Area**, new techniques for conservation of natural resources should be considered. The Expanded Planning Area has been designated as a Study Zone in order to enable the City to inventory its unique characteristics and to develop methods of preserving natural resource areas. About 90% of the land area between Foothill Road and Palomares Road, for example, contains steep or unstable terrain and should be preserved in some form of open space. Possible techniques include creative use of Planned Unit Development (PUD) or open space zoning, transfer of development rights (TDR), and use of conservation easements.

The City extensively uses its PUD zoning district to encourage creative and flexible developments, especially in areas such as Pleasanton Ridge and the Southeast Hills. A good example of the positive effects of using **PUD zoning** can be seen in the Twelve Oaks project where 80% of the land area on Pleasanton Ridge is preserved as open space. **Transfer of development rights** involves the clustering of development credits from a large area, such as the Expanded Planning Area, onto its most desirable locations, resulting in the protection of environmentally sensitive lands. **Conservation easements** are a technique whereby development rights can be purchased so that open space lands can be protected in perpetuity.

Although not a resource produced within the Planning Area, the consumption of **fossil fuels** is a widespread activity which Pleasanton attempts to reduce. The City's TSM Ordinance is designed to reduce gasoline consumption (see Circulation Element) and its energy conservation programs for new construction (see Housing Element) help reduce energy used for heating and cooling. Programs to encourage recycling of solid waste materials also help to reduce energy required to manufacture new containers, as discussed in the Public Facilities Element.

Open Space Land Used for the Production of Resources

The eastern portion of the Planning Area contains the largest deposits of **sand and gravel** in the Bay Area. The Pleasanton Plan designates 3,100 acres of land within the Planning Area for the harvesting of this regionally significant resource. Most of this land is owned by three large sand and gravel harvesting companies (Rhodes-Jamieson, Kaiser Sand and Gravel and Lone Star) who hold

permits entitling them to extract these deposits. The combination of General Plan designation, ownership by harvesting companies and the issuance of mining permits by Alameda County ensure that this resource will continue to be available for productive use.

The reclamation of the sand and gravel quarries is regulated by the Livermore-Amador Valley Quarry Area **Reclamation Specific Plan** (13). The Specific Plan contains staging plans for quarrying operations, a map of usable land remaining following reclamation of the quarry pits, and a plan for future uses of reclaimed land including a chain of lakes, a recreational trail and areas which could support future development. The Specific Plan together with the State's designation of these lands as areas of regional significance effectively will protect this valuable resource until the year 2030, after which deposits of construction grade aggregate are projected to be depleted.

Two large **agricultural areas** are designated on the General Plan Map in the Ruby Hills area and surrounding the GE Vallecitos Research Center. The Ruby Hills area currently supports approximately 300 acres of vineyards and an additional 300 acres of land which supported vineyards until recently. Although these lands are not located within the incorporated City limits, and therefore are not zoned by the City, they do lie within the City's sphere of influence. This area is zoned for agricultural use by Alameda County, a designation which should be continued by the City of Pleasanton should the land be annexed at some future date. Pleasanton's General Plan designation as agriculture prohibits development except for the construction of a single family house on existing lots of record.

The Ruby Hills area is protected by a Williamson Act (14) contract which effectively reduces property taxes to encourage retention of agricultural use. The agricultural belt surrounding the GE Center supports mostly grazing activity at present and is intended to serve as a buffer.

Water Quality

Zone 7, the City of Pleasanton Water Department, and the Hacienda Business Park Owners Association currently are responsible for various water quality **monitoring** efforts. Zone 7 has conducted regularly scheduled monitoring of 100 wells throughout the Valley, including four in Pleasanton, for water levels, mineral content, and contaminants over the past ten years. No significant levels of Volatile Organic Compounds or contaminants have been detected to date in Pleasanton's water supply.

The City Water Department monitors three wells and 35 testing stations for chlorination and fluoridation on a daily basis and for bacteria, total dissolved solids, pH, minerals and heavy metals on a regular basis. All testing results have been acceptable for all toxics and contaminants. The City's backflow

prevention and flushing program protects the continued purity of drinking water once it enters the City system. Hacienda Business Park recently installed twelve shallow wells for testing groundwater and is completing an analysis of water quality which will be published in 1986.

Sewage effluent currently is monitored by the Dublin San Ramon Services District (DSRSD). The DSRSD plant off I-680 produces secondary effluent which is pumped to San Francisco Bay and sludge which is decomposed and buried on-site and then hauled to the Vasco Road landfill site (see Public Facilities Element). DSRSD monitors secondary effluent on a daily basis and monitors the sewer transport system for pH levels and hydrogen sulfide. The District operates numerous test wells at their sewage ponds site, south of I-580, which have shown no toxic material intrusion on the soil content.

The City of Pleasanton maintains and cleans the storm drain system on a regular basis although there is no formal program for monitoring toxics in storm runoff. The City requires double containment and frequent monitoring of all sites used for the storage of hazardous materials as required by the City's Hazardous Materials Storage Permit Ordinance (15).

The City could augment these water quality monitoring efforts by improving coordination among monitoring agencies, expanding business park monitoring, establishing on-site monitoring of all sewer outfalls and storm drains serving hazardous material sites, improving the monitoring and clean-up procedures by Zone 7 in drainage canals, and expanding the Fire Department's computer system to provide the fire dispatch with 24 hour access to hazardous materials information (16).

A discussion of **water supply** and related policies and programs are contained in the Public Facilities Element.

Open Space Land Used for Outdoor Recreation

The City of Pleasanton Department of Parks and Community Services continues to acquire **parkland** through its Park Dedication Ordinance (17), to designate new sites for park use as new residential areas develop, and to provide a wide range of recreational facilities and programs in City parks. The Department currently is investigating methods to implement the recommendations of Zone 7's Arroyo Management Plan to provide recreational use of Arroyos within the Planning Area. The areas designated as Parks and Recreation on the General Plan Map constitute the City's plans for future park use. The City also is working with business park developers to locate and finance a recreational site for business employees. In the future, the City will need to supplement its park dedication ordinance with other methods, including exactions and dedications, in order to acquire all park areas shown on the General Plan Map.

Open Space Land Used for Public Health & Safety

The City continues to restrict development in landslide areas, on steep slopes, in areas of seismic and other geologic hazards by requiring thorough geologic and geotechnical engineering studies of all land proposed for development within hazard areas (see Public Safety Element). The City also requires special treatment of buildings in fire and flood zones and reviews proposed projects in terms of design and aesthetic impacts. The General Plan Map concentrates future development in areas close-in to the City in order to preserve open space areas surrounding the City for the protection of public health and safety.

Conservation and Open Space Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

VII. CONSERVATION AND OPEN SPACE GOALS, POLICIES AND PROGRAMS

Goal 1: To preserve the **natural and man-made resources** of the Planning Area including plant and animal habitats, water courses, and historic structures. (COSE, Subgoal 2, p. 7)

Policy 1: Preserve those natural **wildlife habitats** which support rare and endangered species of plants and animals, where appropriate. (COSE, Objective 1a, p. 7)

Program 1.1: Restrict development to one single family home on existing lots of record within non-development portions of **habitat areas** 1, 4 and 5 on Figure VII-4.

Program 1.2: Allow those uses shown on the General Plan Map within **development portions** of habitat areas 1, 4 and 5 on Figure VII-4 because of their overriding contribution to the community.

Program 1.3: Designate the majority of Pleasanton Ridge and the Southeast Hills as **Public Health and Safety** to protect wildlife habitats.

Policy 2: Preserve **heritage trees** throughout the Planning Area. (COSE, Objective 3e, p. 8)

Program 2.1: Follow the provisions of the City's **Heritage Tree Ordinance** when approving future development projects.

Policy 3: Preserve **stream beds and channels** in their natural state, except where needed for flood and erosion control. (COSE, Objective 2b, p. 7)

Program 3.1: Prohibit construction in those portions of Arroyo del Valle and de la Laguna not shown for development within **habitat area** 2 in Figure VII-4.

Program 3.2: Design **projects** adjacent to the arroyos to protect habitat areas.

Policy 4: Protect all large continuous areas of **open space**, as designated on the General Plan Map, from intrusion by urban development. (COSE, Objective 2c)

Program 4.1: Explore the use of open space zoning, transfer of development rights, and conservation easements in the **Expanded Planning Area**.

Program 4.2: Develop an open space **zoning category** for areas within the City limits designated in the General Plan for open space use.

Policy 5: Preserve as permanent Open Space all areas of outstanding **scenic qualities** or areas from which extraordinary views of natural and man-made objects can be seen. (COSE, Objective 2d)

Program 5.1: Restrict development in areas designated as **Public Health and Safety** to single family homes on existing lots of record.

Program 5.2: Prohibit development of structures within **200 feet** of the crest of Pleasanton and Main Ridges by locating proposed homes on less visible portions of existing lots.

Program 5.3: Explore the purchase of **scenic easements** along the crest of Pleasanton and Main Ridges.

Program 5.4: Implement the recommendations contained in the **Scenic Highway Plan** for I-580 (11).

Program 5.5: Consider **scenic guidelines** similar to those established for I-680 (11) in the City's design review procedures for major arterials and gateway entries into Pleasanton.

Policy 6: Preserve and rehabilitate those **cultural resources** which are significant to Pleasanton because of their age, appearance or history. (COSE, Subgoal 5, p. 9)

Program 6.1: Designate those **historic structures** shown in Table VII-2 for preservation in the Downtown Specific Plan.

Program 6.2: Preserve those historic structures outside the downtown area for use within **City parks** or residential developments.

Program 6.3: Require **archaeological studies** in areas of known archaeological significance prior to development approval.

Program 6.4: Follow the recommendations contained within archaeological studies regarding rehabilitation or preservation of archaeologically significant **structures and sites**.

Policy 7: Designate the **Expanded Planning Area** as a Study Zone to investigate the feasibility of natural resource preservation and managed development. (RRC, Program 7, p. 8)

Program 7.1: Conduct **specific studies** of access, utilities, services, environmental constraints and holding capacity in this area and evaluate land use alternatives according to the City's General Plan policies in cooperation with affected jurisdictions.

Policy 8: Support the policies and programs contained in the Alameda County **Solid Waste Management Plan**.

Program 8.1: Promote the **recycling** of materials at the solid waste transfer station on Busch Road.

Goal 2: To promote **natural resource and agricultural production** in accordance with environmental management practices. (COSE, Subgoal 3, p. 7)

Policy 9: Reserve all areas designated on the General Plan Map as Agriculture and Sand and Gravel Harvesting exclusively for the **production** of those resources.

Program 9.1: Ensure that **sand and gravel** harvesting areas are reused according to the Livermore-Amador Valley Quarry Area Reclamation Specific Plan.

Program 9.2: Design developments adjacent to sand and gravel harvesting areas to include a protective **buffer zone**, similar to that on the east side of Martin Avenue, particularly north of Busch Road and along the Stoneridge Drive Specific Plan Area.

Program 9.3: Discourage development in those **agricultural lands** indicated on the General Plan Map through the use of Williamson Act Contracts and agricultural zoning.

Program 9.4: Protect the **vineyards** in the Ruby Hills area from conversion to non-viticultural use. (Planning Commission Resolution)

Program 9.5: Foster land management practices to discourage **soil erosion** on agricultural lands.

Goal 3: To ensure a high level of **water quality** for Pleasanton.

Policy 10: Protect the **water quality** of surface and ground waters in the Planning Area. (GME, Goal 8, p. 18)

Program 10.1: Foster **water production and conservation** practices which do not allow depletion of groundwater resources below existing levels. (COSE, Objective 3b, p. 8)

Program 10.2: Require new residences to be equipped with **water conservation devices**. (GME Policy 32, p. 20)

Program 10.3: Work with Zone 7 to **monitor water quality** levels and to test for pollution of arroyos and aquifers. (IGPRC, Recommendation E-7, p. 66)

Program 10.4: Work with business parks to install water quality **monitoring wells**. (EMC, p. 6)

Program 10.5: Deny any project which may use **toxic chemicals**, such as herbicides, in water recharge areas, such as areas adjacent to arroyos. (IGPRC, Recommendation E-7, p. 66)

Program 10.6: Investigate **sewage treatment** methods which reclaim wastewater for productive use and which protect the quality of the underground water supply. (COSE, Objective 3c, p. 8)

Program 10.7: Retain all remaining **water recharge areas** as permanent open space, especially the arroyos (Figure VII-3). (COSE, Objective 3d, p. 8)

Program 10.8: Support the policies and programs contained in the **Water Quality Control Plan** for the San Francisco Bay Basin. (OPR, p. 143)

Goal 4: To achieve a complete park and recreational **open space** system within the Planning Area.

Policy 11: Provide sufficient open space to accommodate existing and future needs of residents, workers and visitors for outdoor **recreational activities**. (COSE, Subgoal 4, p. 8)

Program 11.1: Acquire all **park lands** shown on the General Plan Map and retain as permanent open space through the use of the City's Park Dedication Ordinance and other means. (COSE, Objective 4a, p.8; COSE, Objective 4d, p. 8)

Program 11.2: Encourage developers to dedicate public **park acreage** in areas designated for park use on the General Plan Map rather than contribute in lieu fees (17).

Program 11.3: Disperse **neighborhood and community parks** throughout the City and combine them with areas of natural, scenic or cultural resources. (COSE, Objective 4c, p. 8; COSE, Objective 4e, p. 9; COSE, Objective 2d, p. 7)

Program 11.4: Provide a wide variety of **recreational facilities** ranging from tot lots to senior citizens centers. (COSE, Objective 5a, p. 9)

Program 11.5: Prepare a City-wide **Park Master Plan**, using the guidelines established in Table VII-3, in order to develop a system of neighborhood, community and regional parks.

Program 11.6: Develop a financing method for **business park** developers to contribute to the acquisition and improvement of recreational facilities for use by business park employees.

Program 11.7: Develop a system of **bicycle, equestrian and hiking trails** to provide connections between major activity areas such as schools, parks and shopping districts. (COSE, Objective 4f, p. 9)

Program 11.8: Support the recommendations contained in Zone 7's **Arroyo Management Plan**. (OPR, p. 147)

Program 11.9: Coordinate **open space planning** with the guidelines established in ABAG's Regional Plan.

Goal 5: To minimize **health and safety** hazards within the Planning Area.

Policy 12: Protect the **health and safety** of the community by excluding development in hazardous or environmentally sensitive areas. (COSE, Subgoal 1, p. 6)

Program 12.1: Prohibit construction in landslide areas and on terrain with **slopes greater than 25%** unless suitable mitigation measures are included in site plans. (COSE, Objective 1a, p. 6; COSE, Objective 1b, p. 6)

Program 12.2: Restrict construction in **earthquake fault zones** according to criteria established in the Public Safety Element. (COSE, Objective 1c, p. 6)

Program 12.3: Restrict construction in **floodways and floodplains** as described in the Public Safety Element. (COSE, Objective 1d, p. 6)

Goal 6: Promote the use of **energy conservation** measures. (GME, Policy 31, p. 20)

Policy 13: Require all structures to meet **energy conservation requirements** stipulated in The Uniform Building Code. (GME, Policy 31, p. 20)

Program 13.1: Review development applications for potential energy **conservation measures** and designs including site orientation, building design and materials, landscaping and solar access.

Policy 14: Reduce **traffic trips** and number of Vehicle Miles Traveled (VMT) within the Planning Area.

Program 14.1: Enforce the City's **TSM Ordinance** and monitor compliance with LOS standards as discussed in the Circulation Element.

Policy 15: Encourage the **recycling** of solid waste materials.

Program 15.1: Facilitate recycling through the operation of a **drop off facility** on Busch Road and collection of recyclable materials at strategic locations throughout Pleasanton.

Footnotes

- (1) City of Pleasanton, Heritage Tree Ordinance No. 841
January 10, 1978
- (2) Pleasanton Historic Advisory Committee, Preserving Pleasanton's Heritage, June 1978
- (3) Page, Anderson & Turnbull, Downtown Pleasanton Revitalization, 1985
- (4) U.S. Soil Conservation Service, Soil Survey for Alameda County California, 1966; Estimated Engineering Index Properties, August 1984; Soil Characteristics Affecting Urban Development, August 1984
- (5) California Division of Mines and Geology, Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Region, September 1985
- (6) Alameda County, Specific Plan for Livermore-Amador Valley Quarry Area Reclamation, November 1981
- (7) People for Open Space, Endangered Harvest, April 1985
- (8) East Bay Regional Park District, Master Plan - 1980, 1980
- (9) Kent Watson & Associates, Final Arroyo Management Plan, January 1985
- (10) Albert D. Murrow & Associates, Alameda County Fair and Fairgrounds - A Development Plan, October 1972
- (11) P.O.D., Inc., Scenic Highway Plan for Interstate 680 in the City of Pleasanton, January 1985
- (12) See Goals, Policies and Programs section of this Element
- (13) Alameda County, Specific Plan for Livermore-Amador Valley Quarry Area Reclamation, November 1981
- (14) California Government Code, Williamson Act, Section 51200 et seq.
- (15) City of Pleasanton, Hazardous Materials Storage Permit Ordinance No. 1112, November 1983
- (16) Pleasanton Environmental Monitoring Committee, Year End Report, October 1985
- (17) City of Pleasanton, Park Dedication Ordinance No. 439, February 1966

TABLE VII-1

PLANTS AND ANIMALS

Plants	Map#	Plants	Map#	Plants	Map #
*Wild Oats	1	*Italian Rye	1	*Brome grasses	1,2
*Foxtails	1,2	*CA oatgrass	1	*Blue wild rye	1,2
Filarees	1	*Needlegrass	1	*Foxtail Fescue	1,2
Clarkias	1	*Mistletoe	4	*Bigleaf Maple	2
*CA poppy	1	Coffee fern	4	*Shooting Star	2,4
Sedges	2	*CA polypody	4	Mariposa lilies	1
*Tules	2	*Black oak	2,4	Birdsfoot Trefoils	1
*CA bay	4	*Bull thistle	1	*CA buttercup	1
*CA fescue	1,2	Blue dicks	1	Black cottonwood	2,3
Docks	1	Grass nut	1	Fremont cottonwood	2,3
*Mustards	1	*CA buckeye	2,4	Maidenhair Fern	4
Yarrow	1	White alder	2	*Woodland columbine	2,4
*Willows	2,3	*Chickweed	2,4	*Coastal wood fern	4
Gumplant	1	*Sweet fennel	1	Fuller's teasel	1
Tarweeds	1	*Wild radish	1	*CA sycamore	2,3
*Larkspur	2,4	*CA fuschia	1	*Coast live oak	2,4
*Cyprus	2	Yerba buena	1	Blue-eyed grass	1
*Bulrushes	3	*Maul oak	2,4	*Gold-back fern	4
Rushes	2	*Valley oak	2,4	*Milk thistle	1
*Cattails	2,3	*California	4	Paint brush	4
*Blue oak	2,4	*Milkmaids	2,4	*CA coffeeberry	2,5
*Chamise	2,5	*Poison oak	2,4,5	*CA gooseberry	2,5
Hazelnut	5	*Thimbleberry	5	*CA coffeeberry	2,5
*Lupine	1,6	*Blackberry	2,5	Mexican elderberry	2,5
*CA laurel	2,5	*CA sagebrush	5	Bigberry manzanita	5
*Redberry	5	*Coyote brush	2,3,5	Silver bush lupine	5
CA lilac	5	*Snowberry	2,5	*Bush Monkey flower	2,5
*Toyon	5	Creambush	5	*Bracken fern	5

Animals	Map #	Animals	Map #	Animals	Map #
*Shrew	2,4	Myotis	A	Pipistrelle	A
*Mole	1	*Rabbit	A	*Ring-tail cat	2,4,5
*Bat	A	*Squirrel	A	*Weasel	2,4
*Gopher	1,2,4-6	*Chipmunk	A	*Mountain lion	1,4,5
*Rat	A	*Mouse	A	*Mule	1,2
Grey fox	1,4,5	*Skunk	A	Black-tailed Deer	1,4
Coyote	1,4,5	*Opossum	2,3,4	*Muskrat	2,4

 1=Grassland; 2=Riparian Woodland; 3=Freshwater Marsh;
 4=Foothill Woodland; 5=Chaparral or Brushland; 6=Valley
 A=All Areas; *=Observed or Reported (see attached map)

Sources:

The Planning Collaborative, The Ridgeland Regional Park
 Feasibility Study, February 1985

City of Pleasanton, Environmental Element of The General Plan
 1976

TABLE VII-2

HISTORIC BUILDINGS

Map #	Building Name, Address, Year Built & Special Significance
1	Bernal Adobe - Foothill Road - 1850 - Home of Augustine Bernal - Largest land grant holder.
2	Alviso Adobe - Foothill Rd. - 1844 - Oldest adobe. First school site in Murray Township.
3	Kottinger Barn - Ray Street - 1852 - Constructed of adobe brick. Used as a jail.
4	Pleasanton Hotel - 855 Main Street - 1864 - Destroyed by fire twice. Rebuilt in 1915 to appear as it did in 1851.
5	Kolln Hardware - 600 Main Street - 1890 - This building has been a general hardware store since 1905.
6	Johnston Building - 465 Main Street - 1896 - Built as saddlery shop. Notable feature is cutstone parapet.
7	Wenig's Meat Mkt. - 62 Neal - Circa 1880 - Representative of family-run market with living quarters upstairs.
8	Cheese Factory - 830 Main - 1917 - Widespread reputation throughout CA. Business has remained in the family.
9	Veterans Memorial Bldg. - 301 Main - 1932 - Memorial to American Veterans. Elaborately decorated portal.
10	The Old Church - 100 Neal - 1876 - Colonial Revival architectural character expresses expert craftsmanship.
11	Historical Museum - 603 Main - 1914 - Has housed City Hall, Police Department, Council Chambers and Library.
12	First National Bank Bldg. - 700 Main - 1910 - First locally owned and operated bank. Scene of 1926 robbery.
13	Former B of A Bldg. - 500 Main - 1913 - B of A was first tenant. Neo-Classical style inspired by 1893 World Fair.
14	Arendt Bldg. - 450 Main - 1896 - Pleasanton's first mercantile store. Is presently being restored.
15	Southern Pacific Depot - 30 W. Neal - 1901 - This Stick Style structure is representative of the railroad era.
16	Joshua Neal Home - 431 Neal - Circa 1866 - Oldest home in Pleasanton. Fine example of vernacular architecture.
17	Benedict Home - 303 Neal - 1890 - Built of redwood using square nails. One of Pleasanton's finest old residences.
18	Jerome Arendt Home - 625 Main - Circa 1890 - Has been converted to restaurant without destroying its architectural integrity or its landscaped setting, once typical of other impressive homes on Main Street.
19	Charles Bruce Home - 4672 Second Street - 1920 - Built by Charles Bruce, Pleasanton's well-known architect.
20	Joseph Arendt Home - 4397 Second Street - Circa 1890 - Fine example of historical details which are rare today.
21	Century House - 2401 Santa Rita - Circa 1870 - This site was originally a hunting retreat as well as an archaeological site containing Yokut Indian remains.
22	Mohr House - northern terminus of Martin Avenue - Circa 1875 - Two-story farmhouse originally at end of Mohr Ave.

For further historical and architectural information, please refer to Preserving Pleasanton's Heritage, Historic Advisory Committee, June, 1978 or contact the Amador-Livermore Valley Historical Society, 603 Main Street, Pleasanton, CA

TABLE VII-3

PARK STANDARDS

<u>Type</u>	<u>Area/Population Served</u>	<u>Acres</u>	<u>Typical Facilities (1)</u>
Neighborhood	1/2 mile radius	4-10	Playfields, Youth Play Area, Casual Picnic Area, Basketball Courts, Backstop, Benches
Community	City-wide	10-250	Formal Sports Fields, Restrooms, Youth Play Areas, Casual and Group Picnic Area, Parking Lot; and one or more of the following: <ul style="list-style-type: none"> * Swimming Complex * Cultural Arts Complex * Community Center * Heritage Building * Gymnasium * Nature Center * Day Camp Area * Interpretive Center

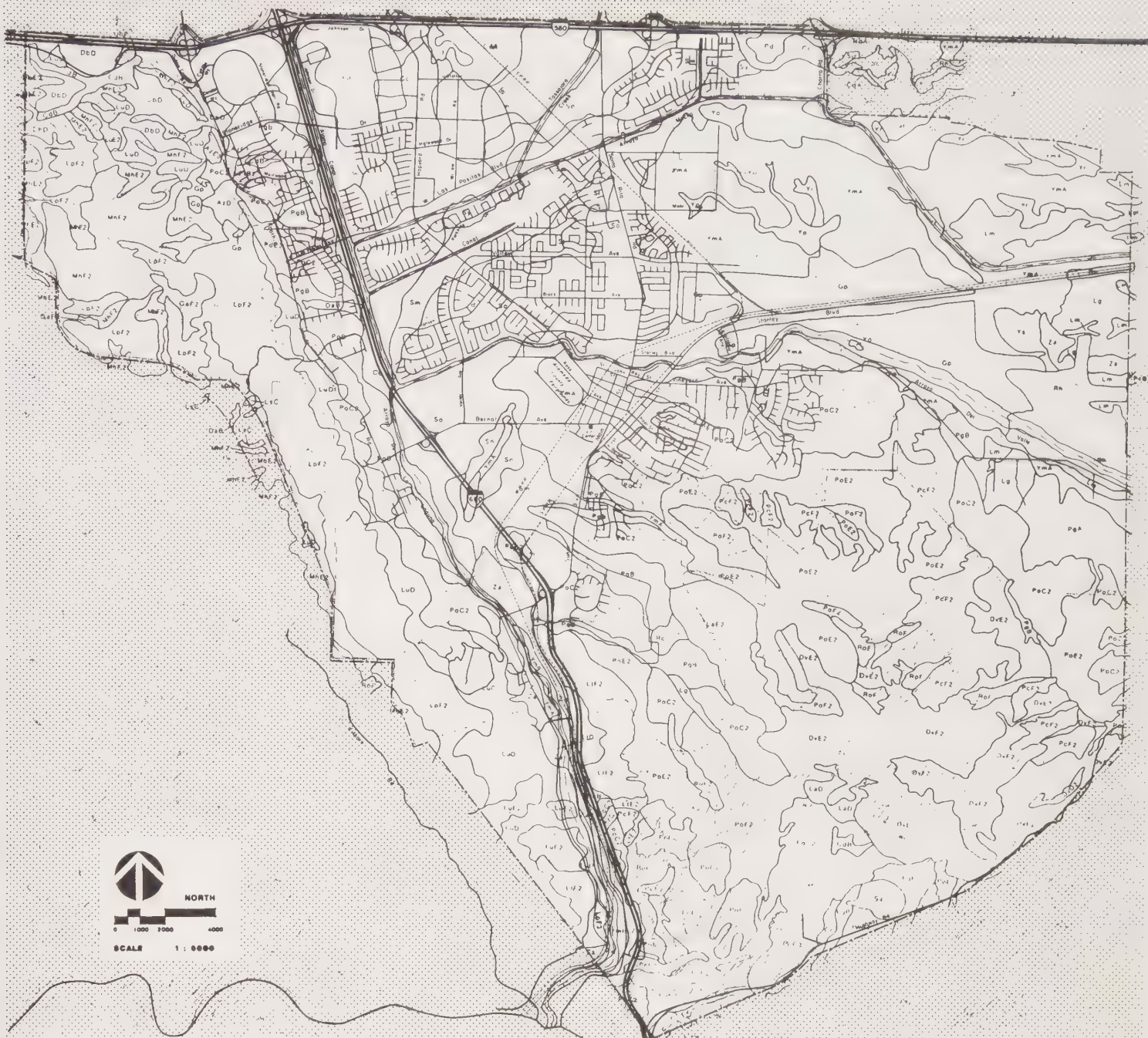


Figure VII-1

SOIL SURVEY



Az	Azule Clay Loam	PcF2	Perkins Loam
C	Clear Lake Clay	Pg	Pleasanton Gravelly Loam
OaB	Danville Silty Clay Loam	Po	Positas Gravelly Loam
Db	Diablo Clay	Rc	Rincon Loam
Gp	Gravel Pit	RdA	Rincon Clay Loam
La	Linne Clay Loam	Rh	River Wash
Lg	Livermore Gravelly Loam	Sa	San Ysidro Loam
Lm	Livermore Sandy Loam	S1	Sunny Vale Clay Loam
LpF2	Los Gatos-Los Osos Complex	So	Sycamore Silt Loam
Lt	Los Osos Silty Clay Loam	Ym	Yolo Loam
Lu	Los Osos & Millsholm Soil	Za	Zamora Silt Loam
Mh	Millsholm Silt Loam		

Source: U.S.S.C.S., Soil Survey
Alameda County, 1966

NOTE: Large scale detailed maps are available for review at City Hall.

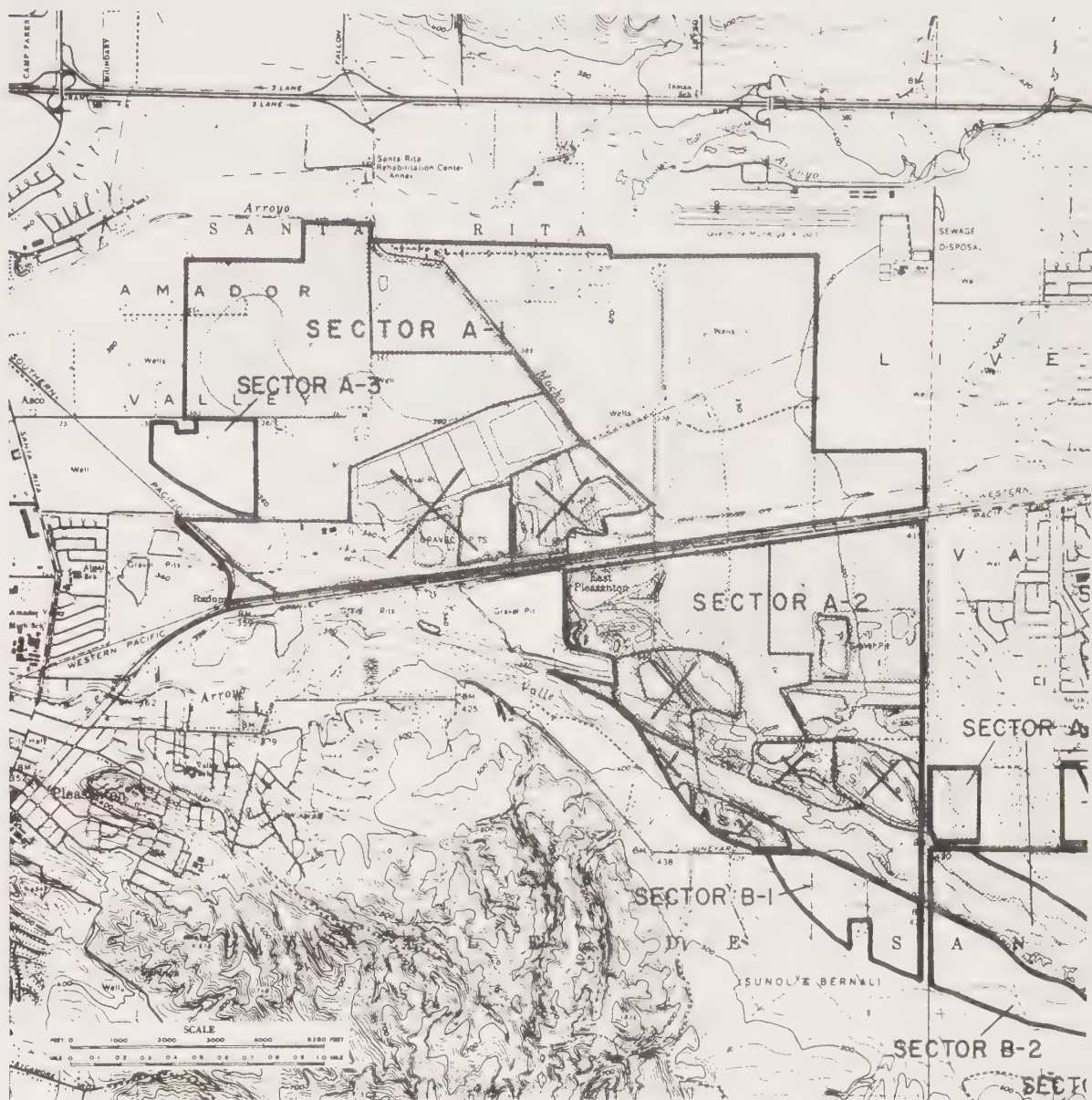


Figure VII -2



AGGREGATE RESOURCE AREAS

- Sector boundary
- Properties owned or controlled by aggregate producers
- Depleted resources

Source: California Division of Mines and Geology

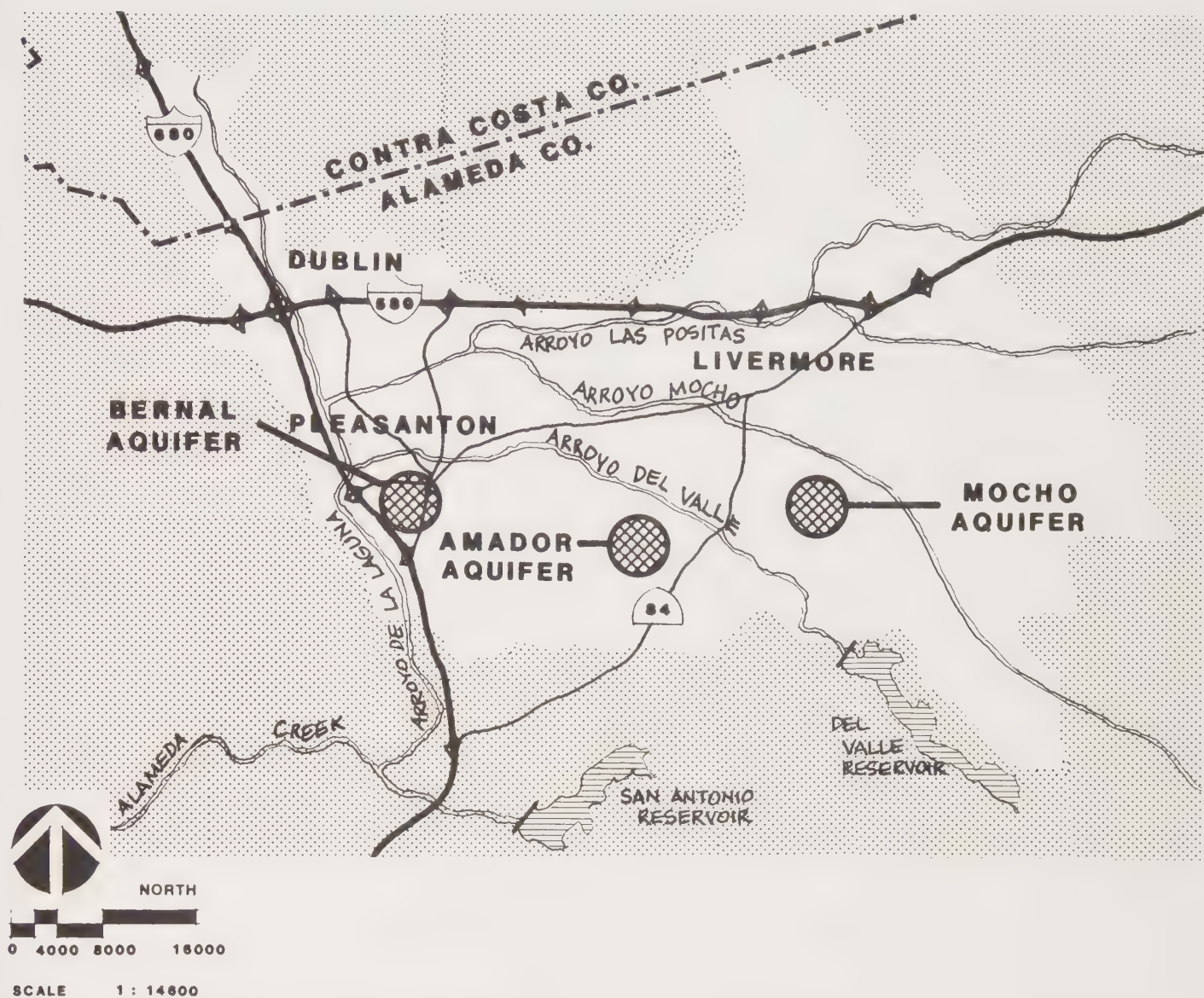


Figure VII-3

WATER RESOURCES



GROUND WATER
BASIN BOUNDARY



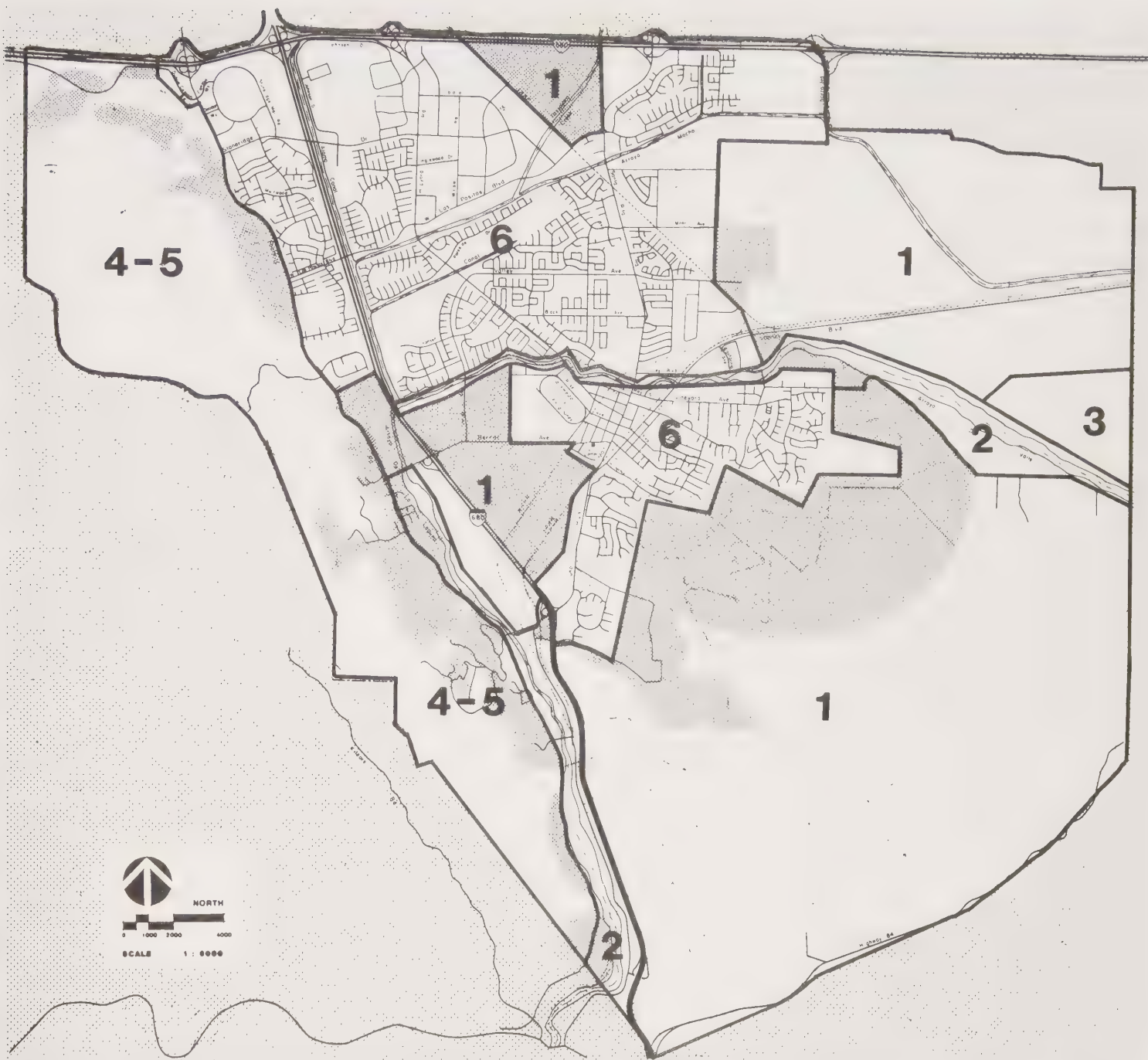


Figure VII-4

PLANTS AND ANIMALS

**Areas planned for
future development**

NOTE: see Table VII-1





Figure VII-5

HISTORIC BUILDINGS



NOTE: see Table VII-2

VIII. NOISE ELEMENT

PURPOSE OF THE NOISE ELEMENT

The Noise Element is intended to protect the health and welfare of the community by promoting community development which is compatible with noise standards.

NOISE

Fundamental Concepts of Environmental Noise (1)

Understanding **environmental noise** requires a familiarity with the physical description of noise and the way humans react to different noises. The important physical characteristics of environmental noise include frequency, intensity, and temporal (time-varying) behavior. The effects of noise on people can be grouped in three general categories: subjective effects, interference with activities, and physiological effects.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. The pressure fluctuation is caused by a vibrating object. It is received by the ear and perceived by the brain as sound. Noise is defined as unwanted or undesired sound. The sound of a train may be music to the engineer, but may be noise to a person living next to the tracks.

The following definitions summarize the physical characteristics of environmental noise.

The **frequency**, or pitch, of sound refers to the number of complete pressure fluctuations, or cycles, per second called Hertz (Hz). Most sounds consist of a broad band of frequencies which are audible to the human ear within a range of 20 Hz to 20,000 Hz.

The **intensity**, or loudness, of a sound is the amount of sound pressure which the human ear feels above and below atmospheric pressure. Intensity is measured on a logarithmic scale called the decibel (dB) which ranges from 0 dB, the threshold of human hearing, to 140 dB, the threshold of pain. A 3 dB change in noise level is barely detectable to the human ear, a 5 dB change is readily noticeable and a 10 dB change is perceived as a doubling (or halving) of loudness (Figure VIII-1).

A-weighted sound levels correlate with the way the human ear "hears" sound and compensates, using a weighting of frequencies, for the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the mid-frequency range. Unless otherwise noted, all sound levels referred to in this noise section are A-weighted sound levels, expressed in decibels as **dBA**.

The **time-varying character** of noise can be described using various statistical descriptors. **L10** represents that noise level which is exceeded 10% of the time and is considered a good measure of the maximum noise averaged over a given period; **L50** represents the median noise level; **L90** is used to describe background noise levels; **Leq** is a good overall description of average noise which can be used to describe any time period but is particularly useful in describing the change in noise level of a single activity, for example, traffic volumes; **Ldn** accounts for the difference in response of people to daytime and nighttime noises by weighting noise levels generated during the nighttime when background noise is generally less and people are more sensitive to noise events. Each nighttime noise event is multiplied by a factor of 10, which is approximately equal to a doubling in perceived loudness, to compensate for people's increased sensitivity during nighttime hours. **Ldn** is used to develop the noise exposure levels shown in Figures VIII-2 and VIII-5.

Human Response to Noise (2,3)

The **effects of noise** on people include subjective effects, such as annoyance and nuisance; interference with activities, such as speech and sleep; and physiological effects, such as startle and hearing loss.

In any typical noise environment, about 10% of the population will object to any noise not of their own making and 25% will not react or complain at all, regardless of the level of noise being generated. Noise control measures, then, are most beneficial to the remaining 65% of the population who are neither ultrasensitive nor insensitive to noise. Negative reaction to noise generally increases with the increase in difference between background, or ambient, noise and the noise generated from a particular source such as traffic or railroad operations. In most situations, noise control measures need to reduce noise by 5 to 10 dBA in order to effectively reduce **complaints**.

People generally have the ability to distinguish one sound from a background of sounds, such as a telephone ringing over music. However, certain noise levels can render a sound inaudible, for example, when **gravel trucks** block conversation on First Street. Face to face conversation usually can proceed up to 66 dBA, group conversations up to 50 or 60 dBA, and public meetings, up to 45 or 55 dBA, without interruption.

Sleep interference is more difficult to quantify although studies have shown that progressively deeper levels of sleep require louder noise levels to cause a disturbance. Learning and job performance begins to be impaired with noise levels of 90 dBA and greater although high frequency or irregular bursts of noise may cause interruption at lower levels. The California Office of Noise Control (ONC) recommends that individual events within sleeping areas should not exceed 50 dB in residential areas

exposed to noise levels at 60 Ldn and greater. Interior noise standards of 45 Ldn adopted within this element will protect against sleep interference except in quiet areas exposed to loud individual noise events, for example, in areas of the Downtown exposed to train noise.

Environmental noise, in almost every case, produces effects which are subjective in nature or involve interference with human activity. However, brief sounds at levels exceeding 70 dBA can produce temporary physiological effects such as constriction of blood vessels, changes in breathing and dilation of the pupils. Steady noises of 90 dBA have been shown to increase muscle tension and adversely affect simple decision making. Long-term exposure to levels exceeding 70 dBA can cause hearing loss. A large body of research in this field documents the varied physiological effects which can result from exposure to noise (4).

Existing Noise Levels

The major source of noise in Pleasanton is **vehicular traffic** including automobiles, trucks, buses, and motorcycles. The level of vehicular noise generally varies according to the volume of traffic, the percent of trucks, the speed of traffic and distance from the source. Noise generated by vehicular traffic currently is greatest along I-580, I-680, Hopyard Road, Santa Rita Road, First Street, Stanley Boulevard, Sunol Boulevard and Valley Avenue. Noise generated by gravel trucks on First Street is a particular problem in Pleasanton which intensifies noise levels above that of automobile traffic. Table VIII-1 summarizes existing noise levels along major roadway segments in Pleasanton and Figure VIII-2 shows those areas currently exposed to noise levels in excess of **60 Ldn**, a level normally acceptable for residential neighborhoods. These areas have been generalized from large scale maps showing noise contours in 5 decibel increments which are available at City Hall.

The City has taken steps to reduce noise levels in residential areas exposed to high levels of traffic noise. The installation of **sound walls** on many segments of City arterials has reduced noise to acceptable levels in most locations. The location of existing and proposed sound walls are shown in Figure VIII-4. Individual homes within **residential areas** shown as 60 Ldn and greater may, in fact, be exposed to noise levels less than the acceptable standard because of the noise reduction effects of homes which are situated between roadways and nearby homes. The noise exposure areas shown in Figure VIII-2 do not take into account this screening effect, and, therefore, represent worst case noise levels.

Noise also is generated by **railroad operations**. Individual noise events generated by rail operations reach 90 dBA at 100 feet from the train, although the noise is of relatively short duration. Despite the fact that current rail operations are limited to an

average of 10 per day in areas adjacent to railroad tracks, the average noise exposure over the course of a 24 hour day is relatively high. Those portions of the downtown area shown as 60 Ldn and greater in Figure VIII-2 are affected largely by train noise. A large component of this train noise is caused by train whistles which are sounded at grade crossings, many of which will be eliminated in the future. The undercrossings at Bernal and Valley Avenues on the Western Pacific tracks and the elimination of the Southern Pacific tracks are notable examples.

Aircraft flying into and out of **Livermore Airport** also can generate annoying individual noise events, although they are rare. The airport is located far enough from Pleasanton so that average noise levels within the Planning Area are relatively low, as shown in Figure VIII-3.

Noise generated by **industrial operations** in Pleasanton is limited primarily to the sand and gravel quarry areas. As shown on the General Plan Map, these areas are located at the eastern portion of the Planning Area and separated from residential areas. Gravel crushers and quarrying equipment can cause noise levels of 60 Ldn and greater at distances within 1500 feet. The closest residential areas to the gravel plants on Stanley Boulevard are the mobile homes on Vineyard Avenue which are about 1200 feet away. These homes are exposed to 60 Ldn noise levels from traffic on Stanley Boulevard which effectively masks the noise from the gravel plants. In the future, new residential projects should be located at sufficient distances from sand and gravel operations, as they are on the General Plan Map, to be protected from this noise source.

Future Noise Levels

Future noise levels were projected using traffic volumes generated at buildout of the General Plan, as discussed in the Circulation Element. Although traffic volumes will increase substantially on existing streets and new traffic will be generated on future streets, noise levels are projected to increase less than 3 dB in most locations. A 3 dB increase in traffic noise levels is considered to be barely noticeable by most individuals. Future noise levels along I-680 and Santa Rita Road, north of Mohr Avenue, however, will increase by as much as 5 decibels. In many locations, noise levels actually will improve. The reason that noise exposure levels will improve or increase to such a small degree is the planned installation of soundwalls along most freeways and major arterials.

Various noise studies and EIRs, most noticeably the North Pleasanton Improvement District EIR (5), have identified locations where noise mitigation will be required to provide noise environments (particularly for residential development) that comply with the Noise and Land Use Compatibility Guidelines adopted by the City of Pleasanton. Those locations where sound

walls have been proposed by these studies are shown on Figure VIII-4.

Figure VIII-5 shows resulting **future noise levels** at buildout assuming projected traffic increases, the effects of new roads and extensions of existing roads, and the noise reductions anticipated by proposed sound walls. The noise exposure areas shown on Figure VIII-5 have been generalized from large scale maps showing noise contours at 5 decibel increments which are available at City Hall. These contours also reflect the fact that at buildout of the General Plan, all but two Western Pacific Railroad grade crossings in the City (at St. Mary and West Angela) will be eliminated. This, in turn, will reduce the need for trains to blow their whistles through Pleasanton. This will result in a significant reduction in the overall noise exposure in the downtown area. The future noise contours, like the existing contours, do not reflect the reduction in noise provided by the screening effect of intervening homes. A row of homes will reduce noise levels by about 5 dB, up to a maximum of 10 dB. Figure VIII-5 shows the total area in the City of Pleasanton exposed to an Ldn of greater than 60 dB. This 60 dB level is the outdoor criterion for residential land uses because it allows most outdoor activity to proceed without interruption and ensures that indoor noise levels will be maintained at acceptable levels.

Ongoing Problem Areas

Many of the areas shown in Figure VIII-2 which currently are exposed to noise levels of 60 Ldn and greater will experience **noise level reductions** to within acceptable standards. When the proposed sound walls have been constructed, there will be few existing residential areas in the City of Pleasanton exposed to noise levels significantly above the standards established in this Noise Element. These remaining areas will experience ongoing noise problems because of the nature of the noise source, such as railroads, or the infeasibility of existing and proposed mitigations, such as soundwalls along I-680 which are lower than optimum for noise control.

The few remaining areas will be in the **I-680 corridor**, where the sound walls proposed by Caltrans as part of the I-680 widening projects will not be high enough to reduce noise levels to within City standards because of the designation of I-680 as a scenic highway (6). The soundwalls will, however, result in a reduction of noise levels outside the nearest residences to or below the federal standard for highway noise. The federal standard is significantly more lenient than the City's goals, but is acceptable in most residential areas.

The other major areas where noise levels will exceed the City's goals in existing residential areas are in the **downtown area** along the Western Pacific railroad tracks, in the **Fairlands** neighborhood south of I-580, and along **Santa Rita Road**, south of

Valley Avenue. Future noise problem areas are shown on Figure VIII-6.

Monitoring of Problem Areas

The assumptions for future noise exposure were based on projections of traffic volumes, speed, and vehicle mix which may change in the future. As traffic projections are updated, these noise projections should be adjusted using a format which can be used in subsequent site specific noise studies. On roadways where traffic volumes have increased by more than 50% above the baseline data, noise measurements should be conducted by a qualified acoustical consultant to verify the noise projections (7). In this manner, noise levels and contours will be kept up to date with changing traffic conditions and verified in areas where significant change is occurring.

The Environmental Monitoring Committee (8) has recommended that **periodic monitoring** be undertaken by the City to evaluate projected noise levels in problem areas. Such spot monitoring can verify noise projections and can measure the effectiveness of existing sound walls. In areas where noise monitoring indicates that existing measures have not reduced noise levels to adopted standards, additional soundwalls or other mitigation measures should be implemented. Locations along I-680 and I-580, along Santa Rita Road south of Valley, and along First Street in the downtown area are reasonable candidates for this type of additional monitoring. Monitoring of I-580 and I-680 should be a first priority because of the possibility to affect Caltrans' design of proposed soundwalls.

Noise monitoring also should be used to test the **effectiveness** of individual project mitigations such as earth berms and building insulation following installation. Such monitoring should be included as part of all noise studies required as a condition of approval of new developments. The results of this monitoring would be useful in satisfying residents' concerns, in verifying noise contours and in recommending effective mitigations in future projects.

Noise Studies

Noise mitigation measures can be better anticipated with such verified data, although **site specific studies** still will be needed in some areas to recommend the most effective noise attenuation measures in a particular location. The City has approved a uniform format for such site specific studies (9) and maintains a list of acoustical consultants who are qualified to perform these technical studies. The studies should include a description of the methodology and assumptions used, an evaluation of the effectiveness of various noise attenuation measures, a recommendation of the most cost-effective measure, a program to test the effectiveness of the measure after it has

been installed and recommendations to revise study assumptions in the case of ineffective mitigations.

Complaint System

A further check to the City's noise projection and monitoring procedures comes from the City's residents. As recommended by a citizen's committee (8), a central phone number is being installed at City Hall for the purpose of recording and investigating **citizen complaints** regarding noise, traffic, truck routes and other environmental concerns. If a reasonable noise complaint is received in an area not otherwise being monitored or mitigated, portable noise monitors will be sent to verify the complaint. In this fashion, the subjective effects of noise which may not be detected by noise projections and monitors can be factored into the community noise environment and properly addressed.

Noise Mitigations

Noise mitigation measures recommended by site specific studies include soundwalls, earth berms, noise insulation, building orientation and setback requirements. Examples of soundwalls can be seen along many arterials in Pleasanton including segments of Hopyard and Santa Rita Roads, Valley Avenue and West Las Positas Boulevard. An example of an earth berm is located west of I-680 which separates the Foothill Knolls development from the visual impacts of I-680 but which was not designed to reduce traffic noise. Earth berms can be an effective noise mitigation if properly designed.

Most new buildings in Pleasanton include **construction materials** adequate to reduce interior noise by 15 to 20 dB below exterior levels. Special acoustical construction techniques can be added to new buildings or retrofitted to old buildings including roof and wall insulation, double pane windows and ventilation systems (10). **Site plan review** of new building projects in Pleasanton includes consideration of topography, building orientation and setbacks to reduce noise levels. All of these noise reduction measures should be considered in locations shown on Figure VIII-5 as being within "conditionally acceptable" areas and should be tailored to individual site characteristics based on an acoustical report. The objective in these areas is to provide outdoor noise levels at or below 60 Ldn where people can be expected to spend a lot of time.

Noise Ordinance

Pleasanton also has adopted a **noise ordinance** (11) which regulates the level of noise emanating from properties within a residential area to 60 dBA at a distance of 25 feet, mainly during nighttime hours. Noise sources generating less than 70 dBA at a distance of 25 feet during the daytime hours are exempt (e.g., household activities) as are pieces of equipment such as

power mowers which generate less than 83 dBA at a distance of 25 feet. The ordinance is intended to discourage unusually noisy activities in residential areas but provides for permits in exceptional cases.

Noise and Land Use Compatibility Guidelines

The objective of the noise and land use compatibility guidelines is to provide an acceptable community noise environment and to minimize noise related complaints from residents. The **compatibility guidelines** should be used in conjunction with the future noise exposure levels in Figure VIII-5 to identify projects or activities which may require special treatment to minimize noise exposure. Homes should not be allowed near a freeway, for example, unless mitigation measures can effectively reduce noise exposure to acceptable levels.

Figure VIII-7 contains **guidelines** which the City uses to evaluate the compatibility between land uses and future noise levels in Pleasanton. The guidelines should be used in conjunction with the noise exposure levels in Figure VIII-5 which refer to the outdoor day/night average noise level (Ldn) in general locations. A land use or project in the "normally acceptable" category will be acceptable within the noise levels indicated, in most cases, without special noise abatement measures. For example, a home of standard construction would be an acceptable use in any area of 60 Ldn or less without special insulation, setback or building design. The same home in an area projected for noise levels of 60 to 70 Ldn should only be allowed following an acoustical study which recommends site specific noise attenuation measures such as double pane windows, setbacks and/or construction of sound walls.

The following considerations should be taken into account when using the Noise and Land Use Compatibility Guidelines.

- * The goal for maximum outdoor noise levels in **residential areas** is an Ldn of 60 dB. This level is a requirement to guide the design and location of **future development** and a goal for the reduction of noise in **existing development**. However, 60 Ldn is a goal which cannot necessarily be reached in all residential areas within the realm of economic or aesthetic feasibility. This goal should be applied where outdoor use is a major consideration (e.g., backyards in single-family housing developments and recreation areas in multi-family housing projects). The outdoor standard should not normally be applied to the small decks associated with apartments and condominiums due to the lack of use of these decks even in quiet areas.

- * The **indoor noise level** as required by the State of California Noise Insulation Standards must not exceed an Ldn of 45 dB in multi-family dwellings. This indoor criterion should also be the maximum acceptable indoor noise level in single family homes.

* If the noise source is a **railroad**, then the outdoor noise exposure criterion should be 70 Ldn for future development. It may not be feasible to reduce noise to 70 Ldn in existing residential areas adjacent to railroads. This is because train noise is usually characterized by relatively few loud events which generally don't cause problems in an outdoor environment. Even though the outdoor Ldn may be high, during the majority of the time the noise level will be acceptable for speech communication and people would not be highly annoyed.

* **Interior noise levels** in both single family and multiple family residential units exposed to railroad noise should be limited to a maximum instantaneous noise level in the bedrooms of 50 dBA. Maximum instantaneous noise levels in other rooms should not exceed 55 dBA. The requirement to reduce railroad noise indoors should be implemented if there are more than four train passbys between 7:00 A.M. and 10:00 P.M. or any trains between 10:00 P.M. and 7:00 A.M. This minimal amount of train operation is sufficient to generate outdoor noise levels of at least 70 Ldn.

* If the noise source is **aircraft**, people will generally be annoyed at a lower average sound level than for the transportation sources. Recent studies have shown that aircraft noise at a given Ldn is more annoying than traffic noise at the same Ldn. Residential developments should be strongly discouraged where the exterior Ldn exceeds 55 dB due to aircraft. If residential uses are allowed in areas where the Ldn exceeds 55 dB, then interior noise levels should be controlled so that maximum noise levels do not exceed 50 dBA in bedrooms or 55 dBA in other rooms. Residential construction should not be allowed in areas where the Ldn exceeds 65 dB from aircraft.

* Appropriate interior noise levels in **commercial, industrial, and office** buildings are a function of the use of space. For example, the noise level in private offices should generally be quieter than for data processing rooms. Interior noise levels in offices generally should be maintained at 45 Leq or less. Acoustical designs to achieve this level should be demonstrated by the project sponsor in sufficient detail to satisfy City staff and OSHA requirements.

* These guidelines are not intended to be applied reciprocally. In other words, if an area currently is below the desired noise standard, an increase in noise up to the **maximum** should not necessarily be allowed. The impact of a proposed project on an existing land use should be evaluated in terms of the potential for adverse community response, based a significant increase in existing noise levels, regardless of the compatibility guidelines.

Noise Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

VIII. NOISE GOALS, POLICIES AND PROGRAMS

Goal 1: To reduce **noise** to acceptable levels throughout the community.
(NE, General Goal, p. 9)

Policy 1: Require **new projects** to meet acceptable exterior noise level standards.

Program 1.1: Use the "normally acceptable" noise levels for new land uses as established in the "**Noise and Land Use Compatibility Guidelines**" contained in Figure VIII-7, including the descriptions contained on pages VIII-8 and 9. (Salter, in lieu of NE, Subgoals 1, 2, 3, & 6, p. 10, 11, & 18)

Program 1.2: Use **noise guidelines and contours** to determine the need for noise studies and require new developments to pay for noise attenuation features as a condition of approving new projects. (Salter)

Program 1.3: Require **noise studies** for future projects to use a consistent format, to analyze alternative mitigations and to evaluate the effectiveness of the mitigations following their implementation. (EMC, p.4)

Policy 2: Reduce outdoor noise levels in **existing residential areas** where economically and aesthetically feasible.

Program 2.1: Install soundwalls, noise insulation and other **mitigations** in areas exceeding City standards where feasible.

Program 2.2: Continue to project and monitor noise levels using traffic projections and periodic **noise monitoring**. (IGPRC, p. 59 and p. 92)

Program 2.3: Verify projected noise levels with noise monitors at locations adjacent to residential and other noise sensitive areas where **traffic volumes** increase by more than 50% from baseline noise data. (IGPRC, p. 92)

Policy 3: Ensure that noise does not exceed **interior noise levels** of 45 Ldn for residential uses and those levels specified in noise studies for other uses.

Program 3.1: Require new developments to pay their fair share of **mitigation measures** necessary to reduce interior noise levels within adjacent or impacted land uses.

Program 3.2: Periodically **monitor** interior noise levels in potential problem areas shown in Figure VIII-6.

Policy 4: Control noise at its **source** to maintain existing noise levels, and in no case to exceed acceptable noise levels as established in the Noise and Land Use Compatibility Guidelines.

Program 4.1: Enforce the noise emission standards for various noise emitting land uses established in the City's **Noise Ordinance** (11).

Policy 5: Protect schools, hospitals, libraries, churches, convalescent homes, and other **noise sensitive uses** from noise levels exceeding those allowed in residential areas. (NE, Subgoal 4, p. 11)

Program 5.1: Locate **noise sensitive uses** away from noise sources unless mitigation measures are included in development plans.

Policy 6: Limit **truck traffic** in residential and commercial areas to designated truck routes. (NE, Subgoal 5, p. 11)

Program 6.1: Limit construction, delivery and through truck traffic to **designated routes**.

Program 6.2: Distribute **maps** of approved truck routes to City traffic officers. (IGPRC, p. 64)

Policy 7: Design City **streets** to reduce noise levels in adjacent areas. (NE, Subgoal 7, p. 11)

Program 7.1: Continue to require **soundwalls**, earth beams, setbacks and other noise reduction techniques as conditions of development approval.

Program 7.2: Attempt to maintain **local and collector streets** at 6000-9000 ADT or less to ensure acceptable noise levels within adjacent residences.

Policy 8: Encourage other agencies to reduce **noise levels** generated by roadways, railways, airports, and other facilities. (NE, Subgoal 8, p. 11)

Program 8.1: Continue to work with the County ALUC, State ONC, and **other agencies** to reduce noise generated from sources outside the City's jurisdiction. (NE, p. 24)

Program 8.2: Update **aircraft noise** projections as future operations at Livermore Airport are projected to change.

Footnotes

- (1) A more detailed discussion of noise can be found in Charles M. Salter Associates, Supplemental Information for the Noise Element of the Pleasanton Plan, December 1985
- (2) A summary description of noise effects is contained in U.S. Federal Aviation Administration, Impact of Noise on People, May 1977; and U.S. Environmental Protection Agency, Noise Effects Handbook, 1981
- (3) A popular summary of health effects is contained in U.S. Environmental Protection Agency, Noise: A Health Problem, August 1978
- (4) A good overall discussion with useful references is, U.S. Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974
- (5) Kreines & Kreines, North Pleasanton Improvement District Draft EIR, October 1984
- (6) P.O.D., Inc., Scenic Highway Plan for Interstate 680 in the City of Pleasanton, December 1984
- (7) Industrial General Plan Review Committee, Industrial General Plan Review: 1983 - 2005, Recommendations for Future Growth, January 1984 (Page 92)
- (8) Environmental Monitoring Committee, Year End Report, October 1985
- (9) Charles M. Salter Associates, Uniform Format for Preparing Site Specific Noise Studies in Pleasanton, June 1986
- (10) Examples of noise insulation can be found in Bolt Beranek and Newman, A Building Code for Exterior Noise Insulation with Respect to Aircraft Noise, June 1975
- (11) City of Pleasanton, Noise Ordinance No. 946, December 1980

TABLE VIII-1
EXISTING NOISE LEVELS

<u>Site Number</u>	<u>Location</u>	<u>Date & Time</u>	<u>CNEL</u>
39	Approximately 55 ft. from center of near lane of Santa Rita Road 10 ft. above grade of backyard of homes	3/14-15/83 24 hours	73
40	67 ft. from center of near lane of Santa Rita Road at West Las Positas	3/7/83 9:30 AM-8:00 PM	68
41	40 ft. from center of near lane of Valley Rd. between Santa Rita Road and Greenwood (12 ft. up on pole)	12/14-15/83 24 hours	66
42	Corner of Stoneridge and Hopyard (behind wall in back yard of 6122 Allbrook)	12/20-21/83 24 hours	61-63
43	92 ft. from center of near lane of Hopyard Road near Virgil Circle 6.2 ft. above grade	6/14-15/83 24 hours	61.5
44	74 ft. from center of near lane of Santa Rita Road at 4425 Seminole Road (upstairs)	6/30-7/1/83 24 hours	72
45	Adjacent to I-580 60 ft. south of right-of-way fence	8/10-11/82 24 hours	78

Source: Charles M. Salter Associates, Inc.

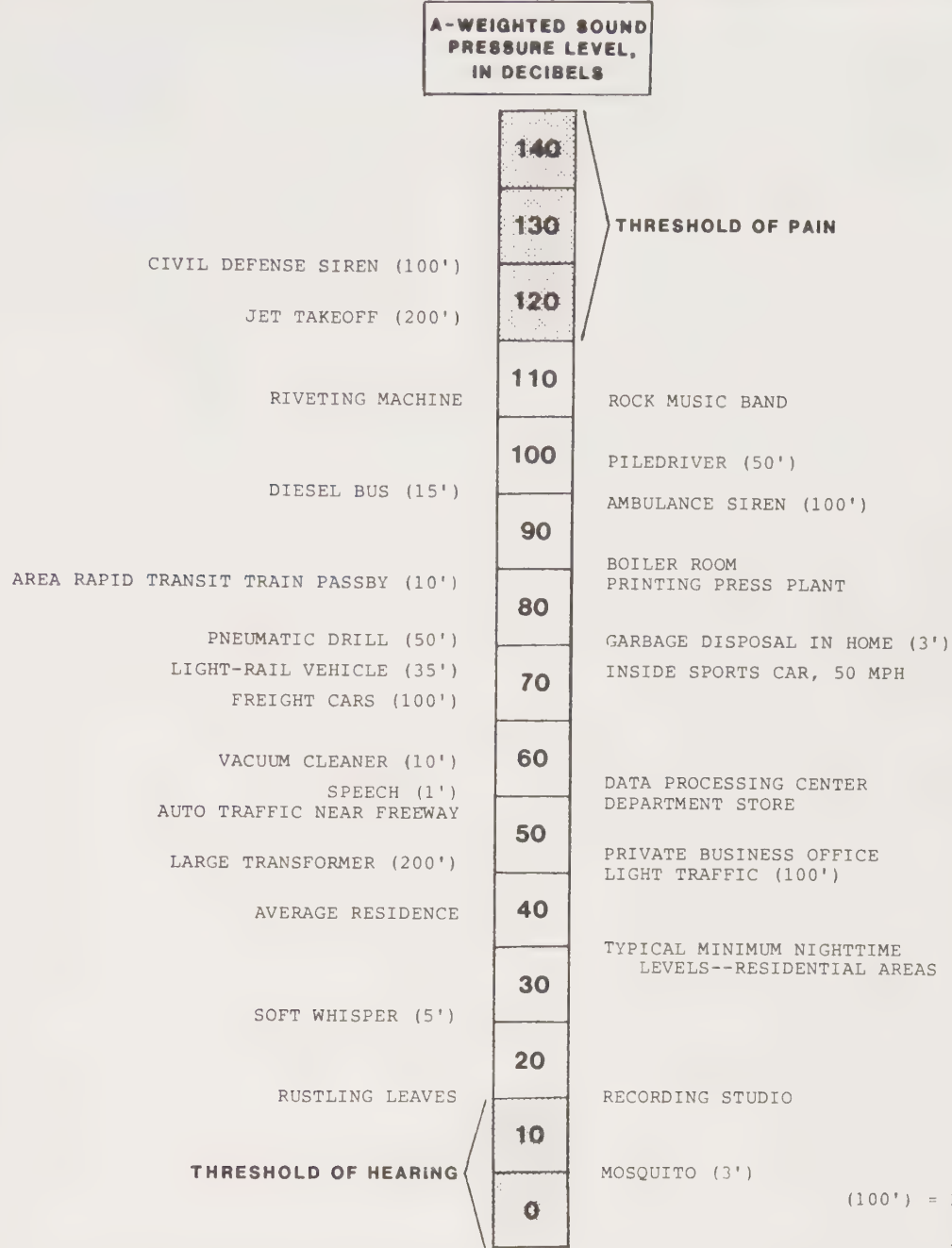


Figure VIII-1
TYPICAL SOUND LEVELS





Figure VIII-2

EXISTING NOISE LEVELS

Shaded areas are subject to a day/night average level (Ldn) of 60 or more dB and include the effects of existing soundwalls.

NOTE: Large scale detailed maps are available for review at City Hall.

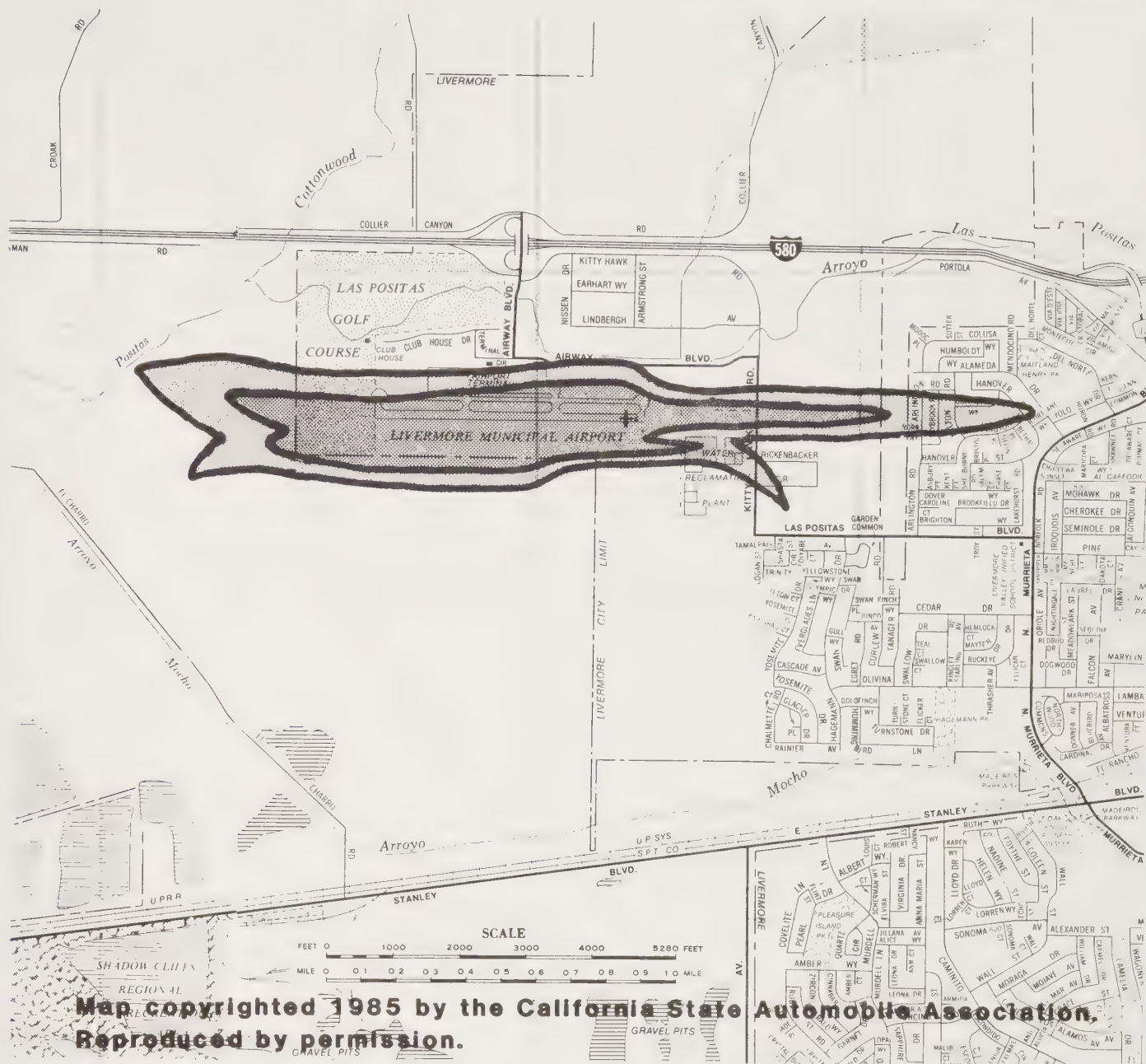


Figure VIII-3

LIVERMORE AIRPORT

NOISE CONTOURS -- 1995



65 CNEL



60 CNEL

Source: Livermore Municipal Airport, Master Plan, 1975



Figure VIII-4

EXISTING AND PROPOSED SOUNDWALLS



- Existing Soundwalls (1986)**
- - - - - Proposed Soundwalls**

NOTE: Soundwalls which may be required in future projects are not shown.



Figure VIII-5

FUTURE NOISE LEVELS

NOTE: Shaded areas are subject to a day/night average level (Ldn) of 60 or more dB. Future residential areas will be mitigated to 60 Ldn or less.

NOTE: Large scale detailed maps are available for review at City Hall.



Figure VIII-6

POTENTIAL NOISE PROBLEM AREAS



NOTE: Noise levels in future residential areas are assumed to be mitigated to acceptable levels based on adopted City standards.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE					
	L _{dn} OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL						
TRANSIENT LODGING --- MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL PROFESSIONAL						
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE						

INTERPRETATION:



NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.



NORMALLY UNACCEPTABLE

New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and insulation features included in the design.



CLEARLY UNACCEPTABLE

New construction or development clearly should not be undertaken.



Figure VIII-7

NOISE AND LAND USE COMPATIBILITY GUIDELINES

IX. AIR QUALITY ELEMENT

PURPOSE OF THE AIR QUALITY ELEMENT

The Air Quality Element is intended to protect the health and welfare of the community by promoting community development which is compatible with air quality standards.

LOCAL AND REGIONAL METEOROLOGICAL INFLUENCES ON AIR QUALITY

The amount of a given pollutant in the ambient atmosphere is determined by the amount of pollutant emitted and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and, for photochemical pollutants, sunshine.

Wind data for the Livermore Airport show wind predominately blowing from the west and southwest, reflecting the location of the Hayward Canyon and Niles Canyon gaps in the East Bay Hills. Winds are generally highest in the afternoon and lowest at dawn. Calm conditions are comparatively frequent, occurring about 23% of the time (1).

Atmospheric stability refers to the tendency of the atmosphere's thermal stratification to suppress or promote vertical dilution of pollutants. The occurrence of high atmospheric stability, known as inversion conditions, severely reduces vertical mixing of pollutants.

Atmospheric stability in the Bay Area is measured twice daily by radiosondes released at Oakland Airport. During the summer, inversions are generally elevated above ground level, and are present over 90% of the time in both the morning and afternoon. In winter, surface-based inversions dominate in the morning hours, but frequently dissipate by afternoon.

The **topography** of the Livermore-Amador Valley also affects air quality. Livermore-Amador Valley is a sheltered inland valley with the valley floor at an altitude of about 400 feet. The valley floor is ringed by hills exceeding 1,000 feet, with only narrow gaps in the hills.

The Livermore-Amador subregional **air basin**, in which Pleasanton is located, also contains the rapidly growing communities of Livermore, San Ramon, Dublin, Alamo and Danville. The Livermore-Amador Valley is located generally downwind with respect to the Greater Bay Area, so that the air stream into the

valley is already contaminated by pollutants released upwind. In turn, pollutants generated within the Livermore-Amador Valley are transported easterly into the San Joaquin Valley. Pollutants from the Bay Area are suspected to be transported into the Sierra Nevada, where they may contribute to acid rain and acid deposition.

The combined effects of frequently light or calm winds, frequent inversions that restrict vertical dilution, and terrain that restricts horizontal dilution give Pleasanton a high atmospheric potential for pollution.

AIR POLLUTANTS AND STANDARDS

The Clean Air Act of 1970 established **air quality standards** for several pollutants. These standards are divided into primary standards, designed to protect the public health, and secondary standards, intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance and other forms of damage. In addition, the State of California has adopted its own standards. The standards are described in Table IX-1. The pollutants for which there are standards are discussed below.

Suspended Particulates

Suspended particulates are solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time. A portion of the total particulate matter in the air is due to natural sources such as wind-blown dust and pollen. Man made sources include combustion, automobiles, field burning, factories and roads, especially unpaved roads.

The effects of high concentrations on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces.

The State of California has recently revised its standard for particulate matter to include only particles less than 10 microns in diameter which are considered respirable. A similar change in the federal standard is imminent.

Carbon Monoxide

Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels, and its main source is automobiles. Carbon monoxide's health effects are related to its affinity for hemoglobin in blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduction of lung capacity and impairment of mental abilities.

Ozone

Photochemical oxidants are a variety of oxidizing substances formed in the atmosphere. The most prevalent oxidant is ozone, a colorless gas; however, the photochemical reactions result in the formation of other gases, particulates and free radicals. The creation of ozone is a result of complex chemical reactions between hydrocarbons and oxides of nitrogen in the presence of sunshine. Unlike other pollutants, ozone is not emitted directly into the atmosphere from any sources. The major sources of oxides of nitrogen and hydrocarbons, known as ozone precursors, are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.

The health effects of ozone are eye irritation and damage to lung tissues. Ozone also damages some materials such as rubber, and may damage plants and crops.

Nitrogen Dioxide

Nitrogen dioxide is a reddish-brown toxic gas. It is one of the oxides of nitrogen that result from combustion. Other oxides of nitrogen, particularly nitric oxide, are converted to nitrogen dioxide in the presence of sunshine. Major sources of oxides of nitrogen are automobile and industrial sources.

The health effects associated with this pollutant are increases in the incidences of chronic bronchitis and lung irritations.

Sulfur Dioxide

Sulfur dioxide is a colorless gas with a pungent, irritating odor. It is created by the combustion of sulfur-containing fuel. This substance is known to oxidize to sulfur trioxide, which combines with moisture in the atmosphere to form a sulfuric acid mist. Sulfur dioxide damages and irritates lung tissue, and accelerates corrosion of materials.

Hazardous Pollutants

In addition to the above pollutants for which there are ambient air quality standards, there is a second class of regulated pollutants known as **hazardous pollutants**. These are known to be injurious, even in small quantities, but are relatively uncommon. There are emission limitations for these pollutants, rather than ambient air quality standards. To date, hazardous pollutants regulated by the Bay Area Air Quality Management District are asbestos, beryllium, mercury, vinyl chloride and benzene (Table IX-2). Businesses which handle, store or transport hazardous materials are regulated by the City's Hazardous Materials Storage Permit Ordinance (2), described in the Public Safety Element.

AIR POLLUTANT SOURCES AND SENSITIVE RECEPTORS

Pleasanton contains a multitude of air pollution sources. The combustion of fuel for space and water heating, industrial processes and commercial uses is one such pollutant source. The evaporation of fuels and solvents, incineration, fires, agricultural tilling and pesticide use are other examples of typical pollutant sources. The largest single source of pollutants is vehicles, which in Alameda County are responsible for 87% of the emitted carbon monoxide, 74% of the emitted nitrogen oxides, 46% of the reactive organic gases, 30% of the emitted sulfur dioxide and 7% of the emitted particulates.

The Bay Area Air Quality Management District (BAAQMD) is the main permitting agency for air pollutant sources. The District lists only one major **stationary source** of pollutants in the Planning Area, Industrial Asphalt, Inc., on Stanley Boulevard, which the District lists as emitting 1,480 lbs/day of particulate matter (3). There are numerous other minor sources of pollutants in Pleasanton that have permits from the BAAQMD, such as dry cleaning plants, gas stations, auto body shops and other businesses using **organic compounds** which hold the potential for polluting the air.

In addition to these sources of major pollutants, the District has identified types of land uses which frequently cause odors, dust or other **nuisances** (4). In Pleasanton, these operations include sand and gravel harvesting areas, the DSRSD sewage treatment plant, the solid waste transfer station and several agricultural areas.

As business parks develop, it is possible that electronic manufacturers and other users of hazardous and potentially annoying substances may locate within the Planning Area. The Pleasanton Plan separates most of these existing and potential locations from residential areas and sensitive receptors through the use of public health and safety buffer zones, as shown on the General Plan Map.

The Bay Area Air Quality Management District defines **sensitive receptors** as those facilities most likely to be used by the elderly, children, infirm, or persons with particular sensitivity to air pollutants. Examples are hospitals, schools and convalescent homes. Figure IX-1 gives the location of such sensitive receptors in Pleasanton. Other sensitive receptors planned to be built in Pleasanton include a senior citizens' center on Sunol Boulevard near Mission Boulevard, a hospital at Santa Rita Road and West Las Positas Boulevard and an intermediate care senior residential complex on Stoneridge Drive and Foothill Road.

EXISTING AIR QUALITY CONDITIONS

The only permanent air quality **monitoring site** in the Livermore-Amador Valley is located in the City of Livermore. The Bay Area Air Quality Management District has operated this monitoring station measuring five pollutants since 1967. A recent analysis of past air quality has shown a general improvement in air quality for ozone, and little change noted for nitrogen dioxide. A declining trend in particulate levels is attributed to a change in station location rather than demographic or regulatory factors (5).

In addition to the monitoring conducted by the BAAQMD, additional air quality and meteorological monitoring is being conducted as a direct result of specific conditions of approval for new business parks. The Hacienda Business Park Owner's Association in cooperation with the City of Pleasanton has contracted for the installation and maintenance of a continuous carbon monoxide sampler near the intersection of Stoneridge Drive and Hopyard Road. Two high-volume particulate samplers measure total suspended particulate and respirable particles every sixth day, and twice yearly samples of particulate matter are analyzed to determine its chemical make-up and the presence of trace metals. Meteorological equipment continuously measures wind speed and direction, temperature and precipitation. The City's Environmental Monitoring Committee is charged with reviewing the monitoring program to ensure compliance with the conditions of approval.

Table IX-3 shows air quality data from the Livermore site for 1980 to 1985. **Violations** of standards for ozone and suspended particulates are shown. Nitrogen dioxide, sulfur dioxide and carbon monoxide are also measured, but no violations of the state or federal standards were recorded.

Since about 1970, **ozone levels** in the Livermore Valley have been decreasing. This improving trend in ozone air quality in past years has had important implications for growth in the Livermore-Amador Valley. Around 1970, Livermore had the worst ozone air quality in the Bay Area, with the federal standard being exceeded over 100 days per year. Air quality forecasts prepared in the 1970's predicted that population growth would interfere with attainment of the federal ozone standard (0.08 parts per million at that time) (6)(7).

The relaxation of the federal **ozone standards** to 0.12 ppm and the reduction in regional emissions due to controls placed on stationary and mobile sources resulted in a steady reduction in the number of violations of the ambient air ozone standards since 1970. By 1980, the highest ozone concentrations had shifted from Livermore to Los Gatos and Alum Rock in the Santa Clara Valley. The most recent forecasts of future ozone levels in the Livermore-Amador Valley shows compliance with the 0.12 ppm

federal standard by the year 1987. These forecasts, however, were based on population projections that have proved to be low. It is possible for population and traffic growth, if unmitigated, to outstrip the effects of controls on mobile and stationary sources of air pollutants, resulting in a degradation of air quality in the future.

A second potential air quality problem related to growth is **carbon monoxide**. Unlike ozone, carbon monoxide is a localized pollutant, i.e., high concentrations are found only near the source although there can be a widespread "cloud" providing high background levels of carbon monoxide. The major source of carbon monoxide is automobiles, so that concentrations of carbon monoxide are greatest near heavily traveled roadways. The emission rate of carbon monoxide is highly dependent on traffic speed, with emissions increasing as speed decreases and idling increases.

Historically, carbon monoxide concentrations have been decreasing in the Bay Area as newer autos have met increasingly stringent emission control requirements. In 1984, a statewide program of auto inspection and maintenance went into effect to reduce vehicle emissions. After 1985 however, no new emission controls are currently contemplated. Concentrations may then increase as traffic volumes and congestion levels increase.

REGIONAL AIR QUALITY PLANNING

The San Francisco Bay Area has been designated as a region where three national ambient air quality standards are being exceeded. Under the 1977 Clean Air Act, the Association of Bay Area Governments (ABAG) was empowered to prepare a non-attainment plan for ozone, carbon monoxide and total suspended particulates. The entire Bay Area is considered a non-attainment area for ozone; only Santa Clara County is a non-attainment area for total suspended particulates (Alameda County was so classified in the late 1970's and 1980), while the non-attainment areas for carbon monoxide are San Jose, Vallejo, and Oakland.

The 1982 **Bay Area Air Quality Plan** (BAAQP) (8) is the non-attainment plan for meeting the federal standards for ozone, carbon monoxide and total suspended particulates. The BAAQP contains analysis and projections of air quality and emissions. Strategies for improvement are evaluated. The Plan includes selected stationary source controls, mobile source controls and transportation controls designed to attain and maintain the Air Quality Standards in the Bay Area.

JUSTIFICATIONS FOR AIR QUALITY PLANNING

Given the past improvement in air quality in the Livermore-Amador Valley, the need for consideration of air quality in the General Plan is not obvious. The following trends and analysis, however, make clear that continued improvement of air quality is not

always assured, and that consideration of air quality in the **planning process** is important.

The 1982 Bay Area Air Quality Plan shows the ambient standard for ozone being met by 1987. This was based on the land use and population estimates found in ABAG's Projections 1979 which more recent projections have proven to be low. Projections of emissions in the Bay Area show that ozone precursors will, in the absence of stricter controls, reach a minimum around 1987 to 1990 and then begin to climb again. Ozone levels also may be assumed to begin increasing after this point.

Ozone found in the Livermore-Amador Valley results from locally-generated pollutants and also from pollutants transported into the area. In the future, the proportion generated locally can be expected to increase, while transported pollutants decrease.

Despite the fact that the Livermore-Amador Valley is developed at relatively low densities, ozone air quality currently exceeds the national ambient standard. The combined effects of future growth in population and traffic, combined with expected deterioration in travel speed and congestion, will offset decreases in mobile and stationary emission rates. Attainment and maintenance of the ozone standard in the future is not likely to occur without effort in the area of air quality planning.

The climatological setting of Pleasanton indicates that the potential for local carbon monoxide problems exists. Traffic volume increase in the future, if combined with deterioration of congestion levels, has the potential to exacerbate carbon monoxide problems.

The potential for future "hardware" measures to reduce air pollutants (emission controls on vehicles or stationary sources, for example) is limited. The easiest and least costly control measures have already been implemented, so that future controls of this type offer diminishing returns for higher cost.

FUTURE AIR QUALITY

Buildout of the Pleasanton Plan would result in the replacement of currently vacant land with residential, commercial and industrial uses. These urban uses are a source of small amounts of pollutants from the combustion of fuel for space and water heating. The General Plan also would allow several point sources of pollutants and users of hazardous materials.

Although the number and nature of future additional air pollutant **point sources** within Pleasanton are not known, each individual source will be required to meet the rules and regulations of the Bay Area Air Quality Management District. These regulations require that sources of hazardous materials or criteria pollutants above certain thresholds obtain permits prior to

construction or operation of the facility. The District regulations may require the use of **Best Available Control Technology**, emission reductions at other locations to offset proposed increases, and detailed analysis and/or modeling of air pollution impacts prior to issuing a permit. In certain cases, the District may also require on-site monitoring prior to and after construction, and may attach conditions that it feels are necessary to avoid public health hazards and community complaints.

By far the largest change in subregional emissions related to buildout under the General Plan would be related to **automobile traffic**. Estimation of the total daily emissions associated with existing and future traffic levels was accomplished using output of the traffic projection model which is discussed in the Circulation Element. This model was used to calculate the **Vehicle Miles Traveled** (VMT) over the Tri-Valley street network for 1985 and at buildout according to the General Plans of Pleasanton and neighboring cities. This calculation is summarized in Table IX-4. Emissions of four pollutants generated by automobiles are shown for 1985 and at buildout. Although Pleasanton contributes to the generation of VMT, commuting within the Tri-Valley is a regional problem to which many jurisdictions contribute.

Table IX-4 shows differing effects for the two **ozone precursors**, hydrocarbons and oxides of nitrogen. At buildout hydrocarbon emissions from automobile traffic is expected to be about 6% below current levels, while emissions of oxides of nitrogen are expected to be about 13% greater. Computer simulation of the formation and transport of ozone within the Bay Area, accomplished as part of the 1982 Bay Area Air Quality Plan, determined that the Bay Area's ozone concentrations are about equally affected by changes in the emissions of hydrocarbons and nitrogen oxides. Such changes have opposite effects, however. Increasing hydrocarbon emissions increase ozone concentrations, while an equal increase in oxides of nitrogen emissions decrease ozone concentrations by about the same amount (8). Therefore, ozone levels at buildout should be somewhat below current levels, provided new industrial sources within the Tri-Valley do not offset the projected decrease in auto-related hydrocarbon emissions and that ozone transported into the area from upwind urban areas does not substantially increase in the future. Additional information addressing these issues should be available after completion of updated ozone simulations as part of an update of the Bay Area Air Quality Plan to be completed during the summer of 1986 by the Bay Area Air Quality Management District.

Auto-related emissions of **particulates** are projected to be 80% above current levels within the Tri-Valley area at buildout. Auto traffic, however, is currently responsible for about 6% of the particulate emissions in Alameda County, so that the resulting change in overall emissions of particulates would be

small. Therefore, no measurable change in particulate levels or exceedances of the state or federal standards would be expected.

Auto-related emissions of **carbon monoxide** are expected to be 6.5% above current levels as shown in Table IX-4. Subregional emissions of this pollutant should not be important in determining the maximum concentrations, however, due to its local nature. Therefore, estimates of the carbon monoxide concentrations at congested intersections have been prepared using an air pollutant dispersion model. The three intersections modeled were selected because they carry the highest volumes of traffic within the City of Pleasanton. Carbon monoxide levels near these intersections should be the highest found in the area. Although freeways in the area carry higher volumes than surface streets, the low speeds and idling associated with intersections result in a greater density of emissions than for the freeways.

The resulting estimated worst-case carbon monoxide levels in the Pleasanton area are shown in Table IX-5. The one-hour concentrations are to be compared to the state standard of 20 ppm, and the eight-hour concentrations are to be compared to the federal standard of 9 ppm. Worst-case concentrations of carbon monoxide are currently below the federal and state standards, and are projected to remain below these standards through buildout.

It should be noted that these projections are based on certain assumptions concerning traffic growth, congestion levels, roadway and intersection improvements as described in the Circulation Element, as well as meteorological conditions, background levels of carbon monoxide and other factors which have a certain level of uncertainty (9). Should the assumptions in the calculation prove incorrect, different results may occur. For this reason, the continuation of the **carbon monoxide monitoring** program and careful evaluation of its results will be necessary to ensure that carbon monoxide levels do remain below the state and federal standards in Pleasanton. The following goals, policies and programs are designed to ensure that air quality levels within the Planning Area remain within established standards.

AIR QUALITY PLANNING, POLICIES AND PROGRAMS

The major reason for including an Air Quality Element in the Pleasanton Plan is to coordinate the planning of land use, circulation, housing and other City policies with their potential effects on air quality. The City of Pleasanton is committed to incorporating air quality considerations into its plans, policies and programs for future development.

The level of air quality in Pleasanton is directly related to **policies and programs** established in other elements of the Pleasanton Plan. The amount and type of land uses, established in the Land Use Element; the number, length and timing of traffic trips, established in the Circulation Element; the amount and rate of housing development, established in the Housing Element;

and the amount of open space, established in the Conservation and Open Space Element; collectively contribute to the City's air quality policies. The BAAQMD suggests a number of policy measures to improve air quality in local General Plans (4), many of which are included in the Pleasanton Plan.

The City's **Growth Management Program** establishes annual limits to housing production which enables the City to monitor and mitigate the effects of growth on air quality and other factors. Policies which encourage **infill development** tend to reduce lengthy traffic trips and consequently vehicle emissions. The General Plan Map promotes the location of **high density uses near transit** facilities, employment and shopping centers and enables **mixed use** developments in the downtown and business park areas which also tend to reduce automobile trips. The City's **TSM Ordinance** requires major employers to promote the use of alternatives to single occupant, peak hour commuting. The proposed LAVTA bus system, BART extension, and light rail vehicle corridors will provide residents and employees with convenient **transit alternatives**, as the City develops.

The City's **Hazardous Materials Ordinance** ensures monitoring of stored materials to prevent leaking of gases into the air. **Public facilities** are phased and funded to encourage compact growth and minimize traffic generating sprawl. Existing and planned residential areas and **sensitive receptors** are located apart from possible sources of air pollutants by Public Health and Safety buffer zones. And the entire developed portion of the Planning Area is surrounded on three sides by **open space** and undeveloped uses to separate Pleasanton from neighboring communities and allow for dispersion of air pollutants. Major policies and programs affecting air quality which are contained in other elements are contained in Table IX-6 to facilitate air quality planning.

A good example of Pleasanton's efforts to integrate air quality into the planning process is the City's Transportation Systems Management (TSM) Ordinance (11). By requiring employees to reduce peak hour traffic trips, the **TSM Ordinance** results in significant reductions of carbon monoxide and other air pollutants as well as reductions in noise, safety and other environmental effects. The City's policies and programs to reduce traffic congestion in the Circulation Element, therefore, are carried forward to effective programs in the Air Quality, Noise and other elements of the General Plan. In order to reduce traffic trips and resultant air pollution, the City requires employers to take progressively greater actions, according to the size of the company and other factors. The steps required by the ordinance for employers of varying size include: completion of a transportation survey, promotion of transportation alternatives, commitment to a company TSM program tailored to employees' needs, appointment of a Transportation Coordinator, inclusion of TSM requirements in lease agreements, and other measures.

Air Quality Goals, Policies and Programs

The following goals, policies and programs, in addition to those contained in other elements, constitute an action program to implement the objectives described in this element.

IX. AIR QUALITY GOALS, POLICIES AND PROGRAMS

Goal 1: To protect the **air quality** of the Planning Area. (GME, Goal 8, p. 18)

Policy 1: Adhere to Federal or State **air quality standards**, whichever is more stringent, for local pollutants of concern. (IGPRC, p. 61)

Program 1.1: Periodically update the air quality **projections** contained in this element to verify compliance with established standards.

Policy 2: Verify the City's **air quality projections** with periodic spot monitoring. (IGPRC, p. 90)

Program 2.1: Identify areas of potential future air quality problems (hot spots) and periodically monitor pollutant levels for possible **violation** of State and Federal standards. (IGPRC, p. 90)

Policy 3: Monitor **carbon monoxide levels** on a continuous basis.

Program 3.1: Require major business parks to fund the maintenance of a permanent, continuous **carbon monoxide monitoring station** and the evaluation of monitor results.

Program 3.2: Notify City Council of all violations of air quality standards in an **annual report**. (IGPRC, p. 90, EMC)

Policy 4: Review **proposed projects** for their potential to impact air quality conditions.

Program 4.1: Include air quality as a factor in the City's **environmental review** procedures.

Program 4.2: Require projects which generate high levels of air pollutants such as manufacturing facilities, hazardous waste handling operations and drive-in restaurants and banks to incorporate **air quality mitigations** in their design.

Policy 5: Review proposed projects for their potential to generate **hazardous air pollutants**. (IGPRC, p. 90)

Program 5.1: Include the Fire Department's **chemical specialist** in staff review procedures of proposed land uses which may handle, store or transport lead, mercury, vinyl chloride, benzene, asbestos, beryllium and other hazardous materials.

Policy 6: Separate air pollution **sensitive land uses** from sources of air pollution.

Program 6.1: Locate air pollution **point sources** such as manufacturing and extracting facilities away from residential areas and sensitive receptors (Figure IX-1).

Program 6.2: Include **buffer zones** within residential and sensitive receptor site plans to separate those uses from freeways, arterials, point sources and hazardous material locations.

Policy 7: Coordinate **air quality planning** efforts with other local, regional and state agencies. (IGPRC, p. 90)

Program 7.1: Incorporate the provisions of **ABAG's** Bay Area Air Quality Plan and **BAAQMD's** Air Quality and Urban Development Guidelines into City Planning and project review procedures.

Program 7.2: Cooperate with the BAAQMD in monitoring air pollutants in the **Tri-Valley** area. (IGPRC, p. 90)

Program 7.3: Notify local and **regional jurisdictions** of proposed projects which may affect regional air quality.

Program 7.4: Cooperate with the BAAQMD and California Air Resources Board in **enforcing** the provisions of the Clean Air Act, State and Regional Policies and established standards for air quality.

DEFINITIONS: **Air Basin** - A basin formed by elevated terrain wherein pollutants may be trapped.

Air Pollution - The presence of man-made gases and suspended particles in the atmosphere in excess of air quality standards.

Ambient Air - Any portion of the atmosphere not confined by four walls and a roof; outside air.

Organic Compounds - Carbon containing chemical compounds involved in photochemical reactions that form ozone.

Precursor - A number of compounds that physically change in composition after being emitted into the air and eventually turn into air pollutants.

Smog - A term used to describe many air pollution problems, it is a contraction of smoke and fog. In California, it is used to describe the irritating haze resulting from the sun's effect on pollutants in the air.

Footnotes:

- (1) California Department of Water Resources, Wind in California, Bulletin No. 185, January 1978
- (2) City of Pleasanton, Hazardous Materials Storage Permit Ordinance No. 1112, December 1983
- (3) Bay Area Air Quality Management District, Base Year 1982 Emissions Inventory Summary Report, November 1982
- (4) Bay Area Quality Management District, Air Quality and Urban Development, November 1985
- (5) Earthmetrics, Inc., Air Quality Trends in Livermore California 1967 to 1981, May 1983
- (6) U.S. Environmental Protection Agency, Draft Environmental Impact Statement: Livermore-Amador Valley Wastewater Management Program, October 1975
- (7) California Department of Transportation, Joint Freeway-Mass Transit Corridor Project on Interstate 580 and State Route 238 in Alameda County, Second Supplement, April 1974
- (8) Association of Bay Area Governments, 1982 Bay Area Air Quality Plan, December 1982
- (9) Donald Ballanti, Air Quality Impacts of the Pleasanton General Plan, April 1986
- (10) Additional definitions and descriptions of air quality information can be found in: Bay Area Air Quality Management District, Air Quality Handbook 1985-1986, November 1985
- (11) City of Pleasanton, Transportation Systems Management Ordinance No. 1154, October 1984

TABLE IX-1

FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

<u>Pollutant</u>	<u>Averaging Time</u>	<u>National Primary Standard</u>	<u>California Standard</u>
Ozone	1-Hour	0.12 ppm	0.10 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.05 ppm	----
	1-Hour	----	0.25
Sulfur Dioxide	Annual	0.03 ppm	----
	24-Hour	0.14 ppm	0.05 ppm
	1-Hour	----	0.50 ppm
Total Suspended Particulates	Ann. Geom. Mean	75 ug/m3	----
	24-Hour	250 ug/m3	----
Suspended Particulate Matter (P.M. 10)	Ann. Geom. Mean	----	30 ug/m3
	24-Hour	----	50 ug/m3

ppm = parts per million; ug/m3 = micrograms per cubic meter;
P.M. 10 = particulate matter less than 10 microns in diameter

Source: U.S. Environmental Protection Agency; California Air
Resources Board

TABLE IX-2
EMISSION LIMITS FOR HAZARDOUS POLLUTANTS

<u>Substance</u>	<u>BAAQMD Limitation</u>
Lead	15 lbs/day (1)
Asbestos	No visible emissions
Beryllium	10 grams/24 hours (1)
Mercury	2.3 kilogram/24 hours (1)
Vinyl Chloride	10 parts per million in gas stream (1)
Benzene	No detectable emissions from pumps, valves or compressors*

(1) Other limits may apply depending on the process used and materials involved

Source: Bay Area Air Quality Management District, Rules and Regulations Volume II, as amended

TABLE IX-3

EXISTING AIR QUALITY CONDITIONS - 1980-1985

<u>Pollutant</u>	<u>Standard</u>	<u>Number of Annual Exceedances:</u>					
		<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Suspended	Federal 24-hour	0	0	0	1	0	0
Particulates	State 24-hour	10	0	0	0	*	*
Ozone	Federal 1-hour	2	2	1	8	7	4
	State 1-hour	11	21	9	20	32	11

* The state standard for Total Suspended Particulates was changed in 1984 to a standard for particulate matter less than 10 microns in diameter (P.M. 10). Measurements of P.M. 10 are not currently made on a regular basis, however.

Note: Data is from BAAQMD monitoring station in Livermore.

Source: California Air Resources Board, California Air Quality Data Annual Summary, 1980-1985

TABLE IX-4
TRI-VALLEY AUTO EMISSIONS
(tons/day)

	<u>Vehicle Miles Traveled</u> <u>Surface</u>	<u>Freeway</u>	<u>Carbon Monoxide</u>	<u>Hydro-carbons</u>	<u>Nitrogen Oxides</u>	<u>Parti- culates</u>
1985	2,647,297	3,819,635	94.1	11.7	17.1	16.7
Build- out	5,338,364	6,529,556	100.3	11.0	19.3	30.1
% Change	+101	+71	+6.5	-6.0	+12.8	+80.2

Source: Donald Ballanti, Air Quality Impacts of the Pleasanton General Plan, April 1986

TABLE IX-5

ESTIMATED WORST-CASE CARBON MONOXIDE CONCENTRATIONS
(PARTS PER MILLION)

Intersection	1-Hour Averaging Time (standard = 20 ppm)		8-Hour Averaging Time (standard = 9 ppm)	
	<u>1985</u>	<u>Buildout</u>	<u>1985</u>	<u>Buildout</u>
Santa Rita/ W. Las Positas	8.8	10.0	6.5	7.3
Hopyard/ Stoneridge	9.5	9.1	7.0	6.6
Hopyard/ W. Las Positas	10.4	9.0	7.6	6.6

Source: Donald Ballanti, Air Quality Impacts of the Pleasanton General Plan, April 1986

TABLE IX-6

AIR QUALITY RELATED POLICIES CONTAINED IN OTHER ELEMENTS

<u>General Plan Element</u>	<u>Policy/Program</u>	<u>Summary Description</u>
Land Use	Policy 2	Encourage infill housing
	Policy 3	Improve mixed uses downtown
	Program 5.1	Monitor effects of business parks
	Policy 8	Preserve open space
	Policy 10	Regulate residential growth rate
	Program 14.2	Discourage leapfrog development
Circulation	Policy 2	Maintain Level of Service D
	Program 2.4	Computerize traffic monitoring
	Program 4.1	Provide setbacks from arterials
	Policy 10	Reduce Average Daily Traffic trips
	Policy 11	Reduce peak hour traffic trips
	Program 11.1	Enforce TSM Ordinance
	Policy 12	Locate high densities near transit
	Policy 13	Support local bus service
	Policy 14	Study light rail feasibility
	Policy 15	Encourage the extension of BART
	Program 16.1	Fund Dial-A-Bus for seniors
	Policy 17	Maintain bicycle system

	Program 17.2	Require bicycle storage facilities
	Policy 18	Maintain pedestrian system
Housing	Policy 2	Maintain high density housing
	Policy 7	Promote low income housing
	Policy 8	Promote moderate income housing
	Policy 9	Meet regional housing allocation
	Policy 13	Rehabilitate existing housing
	Policy 17	Locate housing near jobs, shops
Public Safety	Policy 15	Regulate hazardous materials
Public Facilities	Policy 1	Phase utilities to serve growth
Conservation & Open Space	Policy 4	Protect open space
	Policy 12	Protect hazardous areas
Noise	Policy 6	Limit trucks to specified routes



Figure IX-1

SENSITIVE RECEPTORS

1. Fairlands School
2. Donlon School
3. Lydiksen School
4. Foothill High School
5. Harvest Park School
6. Walnut Grove School
7. Alisal School
8. Amador High School
9. Pleasanton Guest Home
10. Pleasanton School
11. Pleasanton Convalescent Hospital
12. Valley View School
13. Vintage Hills School



X. INDEX OF KEY WORDS

KEY WORD	ELEMENT
Acceptable Risk	V
Active Fault	V
Affordability	IV
Agriculture	VII
Air Navigation Hazards	V
Air Quality	VIII
Airport	III
Airport Land Use Commission (ALUC)	V
Alquist-Priolo Act	V
Annexation	VI
Aquifer	VII
Arterials	III
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Buildout	II
Calaveras Fault	V
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Cattle Grazing	VII
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Collectors	III
Community Facilities	II
Commute	IV
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Constraints	IV
Critical Facilities	V&VI
Differential Settlement	V
Downtown	II
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Earthquakes	V
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Employment	IV
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Energy Conservation	IV
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Expanded Planning Area	I&II
Expansive Soils	V
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Fault Trace	V
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Fire Load Index	V
Fire Prevention	V
Flood Hazards	V
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General Plan Map	I&II
General Referral Area	V
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Ground Shaking	V
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Heliport	V
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Housing Tenure	IV
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Housing Unit	IV
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Liquefaction	V
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Lower Income Households	IV
Lurch Cracks	V
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Mobile Homes	IV
Moderate Income Households	IV
Multiple Family	IV
Mutual Aid	V
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Native Plants	VII
Neighborhoods	II
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Paratransit	III
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Parks	VII
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Pleasanton Ridge	II
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Population and Employment	II
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Reclamation	VII
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Rock Falls	V
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Scenic Highway	VII
Schools	II
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Seiches	V
Seismic Hazards	V
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Sewage Coefficients	VI
Sewer	VI
Single Family	IV
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Subsidized Housing	IV
Substandard Housing	IV
Surface Faulting	V
Transportation Systems Management (TSM)	III
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Volume/Capacity Ratio (V/C Ratio)	III
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Wildlife Habitats	VII
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XI. GENERAL PLAN ISSUES INAPPLICABLE TO PLEASANTON

The following list contains issues which are required to be addressed in the General Plan, pursuant to Government Code section 65302, and recommended for consideration by local jurisdictions pursuant to the General Plan Guidelines, to the extent that they are applicable in each jurisdiction. The following issues are non-existent within or inapplicable to the City of Pleasanton and its Planning Area. The following list contains those issues along with the justification for excluding them from the General Plan.

<u>General Plan Issue</u>	<u>Justification for Excluding in this Document</u>
Aviation Facilities	The nearest airport is in Livermore, the impacts of which are addressed in the Public Facilities Element. A planned heliport facility also is discussed in the Public Facilities Element.
Farm Worker Housing	Because of the lack of farming activity in the Planning Area, there appears to be no need for farm worker housing.
Fish	There are no large waterways which spawn or carry significant amounts of fish within the Planning Area, other than arroyos which are discussed in the Conservation and Open Space Element.
Forests	There are no forests in the Planning Area other than those discussed in the Conservation and Open Space Element.
Pipelines	There are no major fuel pipelines in the Planning Area other than natural gas transmission and distribution lines which are discussed in the Public Facilities Element.
Ports, Harbors and Waterways	There are no such facilities in the Planning Area.
Scenic Rivers	There are no scenic rivers in the Planning Area.
Solid Waste Disposal Areas	The nearest waste disposal area is located on Vasco Road, outside the Planning Area. No suitable waste disposal sites exist within the Planning Area.
Timber	There are no areas used for the production of timber in the Planning Area.
Tsunamis	There is no possibility of safety hazards due to tsunamis because of Pleasanton's location within an inland valley. The hazards caused by seiches are discussed in the Public Safety Element.

XII. CONTRIBUTORS TO THIS DOCUMENT

This document was prepared by the Pleasanton Department of Planning and Community Development for the Pleasanton City Council, Planning Commission and the citizens of Pleasanton. Contributions were made to the document by individuals too numerous to name. The authors extend their sincere appreciation to all those members of the community who contributed their time and energy to making this a better document to guide the future of Pleasanton.

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Special thanks to Scott Erickson for his assistance in report graphics and to Carolyn Honsberger for her inimitable organization and moral support.

The following individuals and organizations made invaluable contributions to the report: Ann Doss, Amador-Livermore Historical Society; Buster McCurtain, Amador-Pleasanton Public Schools; Irwin Mussen and Jean Roggenkamp, Bay Area Air Quality Management District; Bissell & Karn; Brian Tucker, California Division of Mines and Geology; Roger Frye, Camp Dresser & McKee; Brenda Gillarde; Jim Musbach, Gruen Gruen + Associates; Robert Harris; Grace Chow, Lowry & Associates; Jeff Grote, Jeff Loux and Dan Marks, The Planning Collaborative, Inc; Rudy Platzek; The Pleasanton Environmental Review Committee; John Innes and The Pleasanton Industrial General Plan Review Committee; Harvey Levine and The Pleasanton Residential Review Committee; Bill Beatty, U.S. Soils Conservation Service; Vince Wong, Zone 7.



PLEASEA GENER

RESIDENTIAL

Rural Density

One unit per 5 gro:
detached single far

Low Density

Less than 2 dwellir
predominately deta

Medium Density

2 to 8 dwelling unit
predominately deta
also including towr

High Density

8 + dwelling units
apartments.





INDUSTRIAL, C AND OFFICES

Retail, Highway, an
Commercial/Busine





General and Limite

PLEASANTON GENERAL PLAN


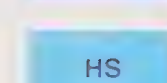
RESIDENTIAL

-  Rural Density
One unit per 5 gross acres; predominately detached single family homes.
-  Low Density
Less than 2 dwelling units per gross acre; predominately detached single family homes.
-  Medium Density
2 to 8 dwelling units per gross acre; predominately detached single family homes but also including townhouses and condominiums.
-  High Density
8+ dwelling units per gross acre; predominately apartments.


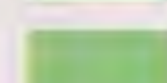

INDUSTRIAL, COMMERCIAL AND OFFICES

-  Retail, Highway, and Service Commercial/Business and Professional Offices.
-  General and Limited Industrial
-  Sand and Gravel Harvesting
-  Business Parks (Industrial/Commercial and Offices)

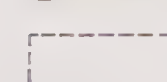
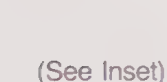
COMMUNITY FACILITIES

-  Public and Institutional
-  Schools
ES — Elementary School; JHS — Junior High School; HS — High School; FS — Future School.

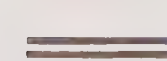






OPEN SPACE


-  Parks and Recreation
-  Agriculture and Grazing
-  Public Health and Safety
(See Land Use Element for an explanation of development potential)

SPECIAL PLANNING AREAS

-  Specific Plan Area
Land uses and densities are conceptual only and may change subject to the outcome of the specific plan.
- (See Inset)  Study Zone
Land uses and densities will be determined by studies of access, utilities, public services, etc.

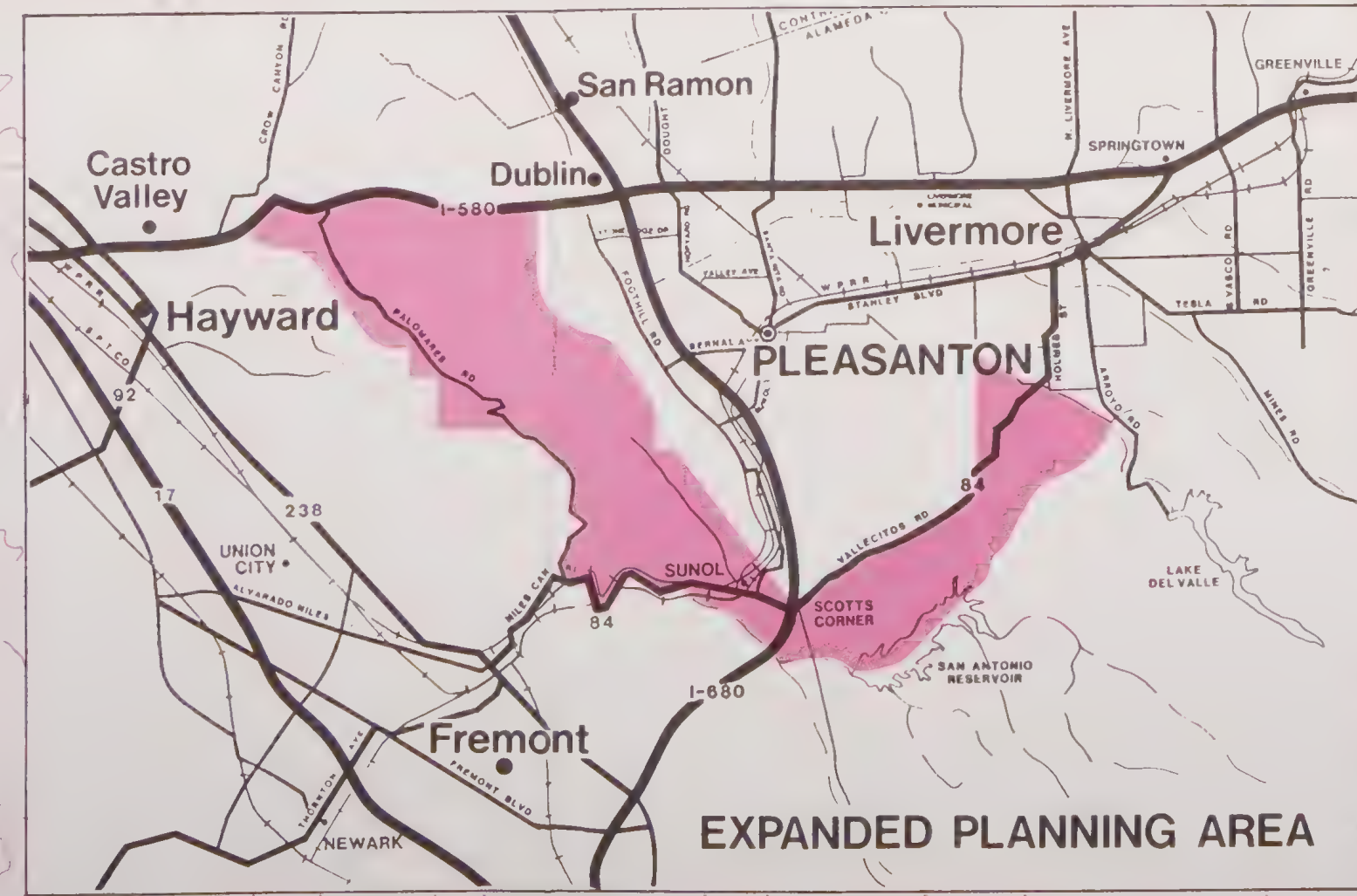
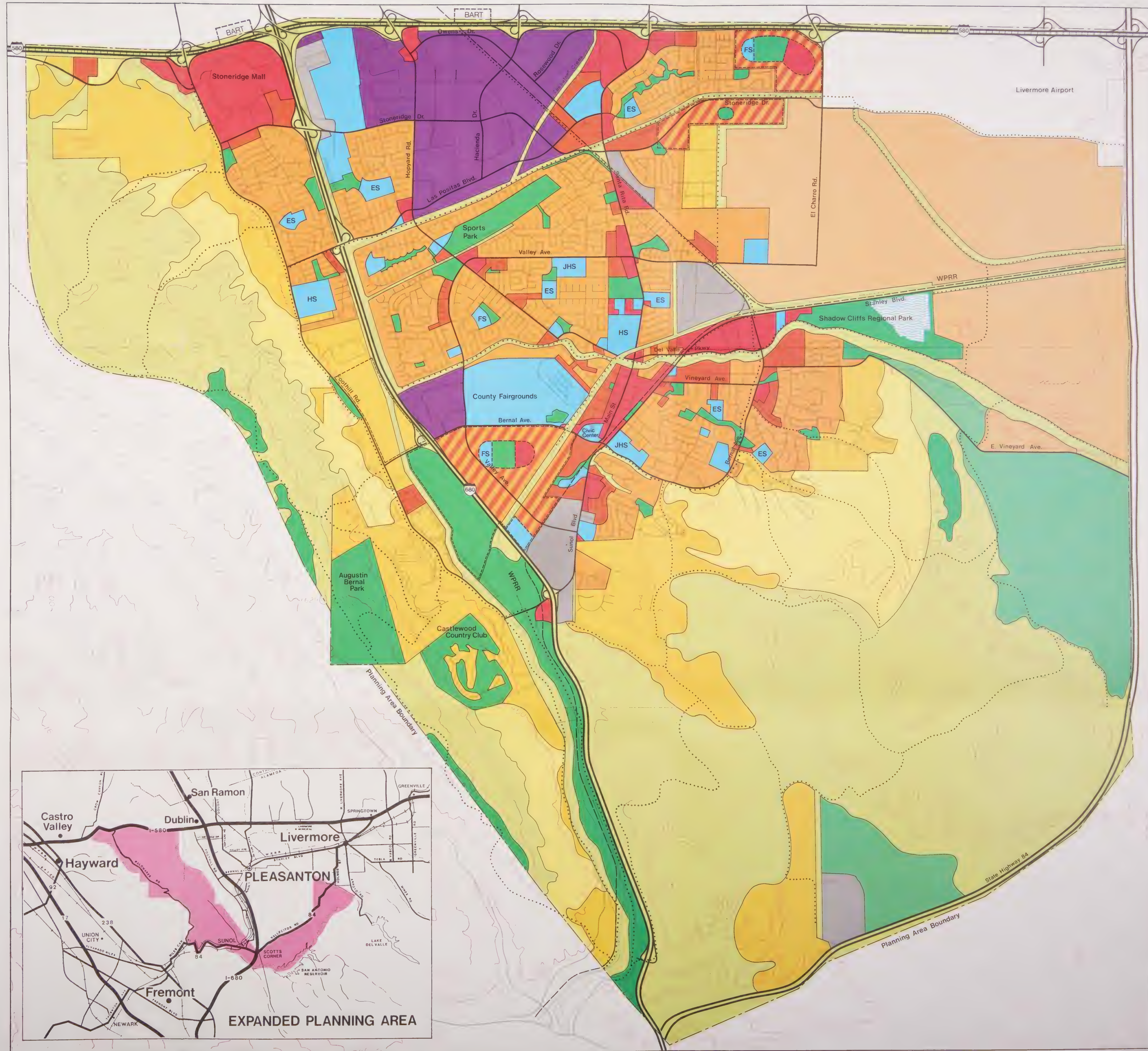
CIRCULATION

-  Freeway
-  Thoroughfare
-  Collector Street
-  Proposed BART Extension and Station
-  Proposed Pathway System
-  Railroad
-  Transportation Corridor







0 1000 2000 4000

The land use proposals shown on this map can only be fully understood through reference to the General Plan document. For more information, please contact the Department of Planning and Community Development, 200 Old Bernal Avenue, Pleasanton, CA 94566 (415) 847-8023.




LEGEND




RESIDENTIAL

-  Rural Density
1 dwelling unit per 8 gross acres
-  Low Density
Less than 2 dwelling units per gross acre
-  Medium Density
An average of 5 dwelling units per gross acre;
predominately detached single family homes
but also including townhouses & condominiums
where densities do not exceed 8 units per gross acre
-  High Density
An average of 15 dwelling units per gross acre;
predominately apartments


COMMERCIAL & OFFICES

-  Retail, Highway and Service Commercial/
Business and Professional Offices




INDUSTRIAL

-  General and Limited Industrial
-  Sand & Gravel Harvesting
-  Industrial/ Commercial and Offices

COMMUNITY FACILITIES

-  Public and Institutional, Schools

OPEN SPACE

-  Parks and Recreation
-  Agriculture and Grazing
-  Public Health and Safety

SPECIFIC PLAN BOUNDARY

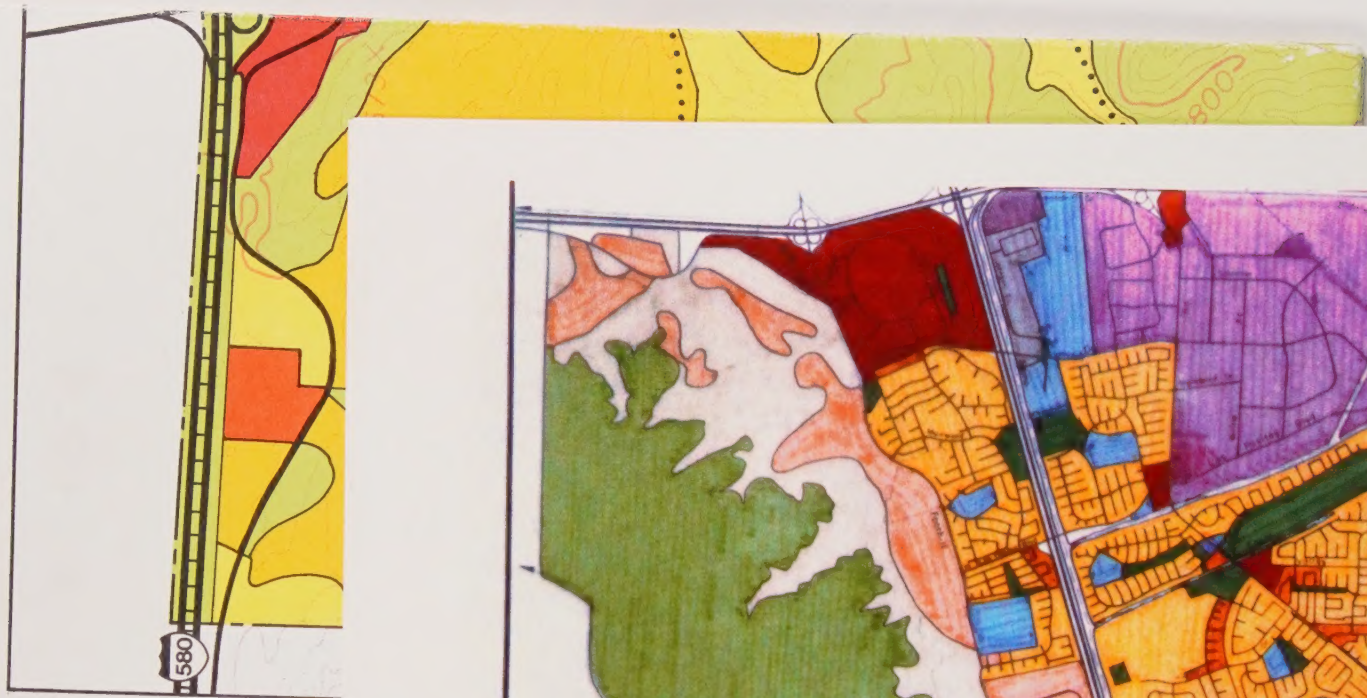


NOTE : Future roadways are shown
in the Circulation Element.

0 1000 2000 3000 4000 5000
FEET
SCALE



**PROPOSED
GENERAL
PLAN**



U.C. BERKELEY LIBRARIES



C124887141

